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Rural-Urban Linkages and Welfare: The Case of Ghana's Migration and Remittance Flows

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A thesis submitted for the degree of Doctor of Philosophy

University of Bath

Department of Economics and International Development

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Abstract

In spite of the prevalence of rural-urban interactions in developing countries, much remains to be learnt about their welfare impacts. This thesis extends the discussion on rural-urban linkages by examining – for Ghana – two of the main forms of such interactions: migration and remittance flows. The study explores factors influencing migration and remittance flows, and also evaluates the impacts of these linkages on poverty and consumption welfare, using data from the 1998/99 Ghana Living Standards Survey. A key feature of the analyses is the construction of counterfactual scenarios and the application of a methodology that adjusts for selectivity bias.

The estimates of migration gains show different mean welfare impacts on our two types of in-migrants. Although some urban-to-rural in-migrants derived welfare gains from migrating, urban-to-rural migration generally had a negative impact on the welfare of in-migrants. In the case of rural-to-urban migration, a small percentage of in-migrants incurred welfare losses, but on the whole, migration enhanced considerably the welfare of in-migrants. Additionally, there is evidence to suggest that on the whole, rural non-migrants would have incurred a reduction in welfare if they had migrated to urban areas.

In the analysis of remittances, a number of influences on these flows have been identified. These include employment income, the presence of an in-migrant, kin-fostering, the relationship between remitters and recipients, and gender. Our results also provide support for the presence of both altruism and self-interest in remittance decisions. Even though rural-to-urban remittances had little impact on the welfare of recipients, our estimates suggest that rural recipients of urban remittances derived, on average, considerable proportionate welfare gains.

According to the findings, both migration and remittance flows often affect the poverty status of participants. For many of these migrants or remittance recipients, these linkages constitute an important route for escaping poverty. Finally, relative to inter-sectoral migration, inter-sectoral remittances had a more favourable direct impact on aggregate poverty and inequality.

List of Abbreviations

BECE: Basic Education Certificate Examination

COMPAS: Centre on Migration, Policy and Society

DFID: UK Department for International Development

DHS: Demographic and Health Survey

EC-PREP: European Community's Poverty Reduction Effectiveness Programme

ESRC: Economic and Social Research Council

GDHS: Ghana Demographic and Health Survey

GLSS: Ghana Living Standards Survey

GLSS1: The 1987/88 Ghana Living Standards Survey

GLSS2: The 1988/89 Ghana Living Standards Survey

GLSS3: The 1991/92 Ghana Living Standards Survey

GLSS4: The 1998/99 Ghana Living Standards Survey

GSS: Ghana Statistical Service

IFAD: International Fund for Agricultural Development

ISSER: Institute of Statistical, Social, and Economic Research

KVIP: Kumasi Ventilated Improved Pit Latrine

MI: Macro International Inc.

MSLC: Middle School Leaving Certificate

NMIMR: Noguchi Memorial Institute for Medical Research

Chapter One:
Introduction

1.1 Introduction

The rural-urban categorization is one of the most well-known classifications of households in developing countries. Even though some livelihood differences exist within each of rural and urban sectors, it is widely acknowledged that urban welfare levels generally exceed those of rural areas. Moreover, rural-urban differences characterise households' asset portfolios and livelihood activities. These differences often generate linkages between the two sectors. The linkages include migration, remittance flows, trade, and the utilisation of resources across the two sectors. As expected, the disparities in rural-urban welfare and livelihoods – and the associated linkages between the two sectors – have spawned various discussions in the development literature. Whilst some have explored factors underlying the rural-urban welfare gap (see Lipton, 1977 and 1982; and Corbridge, 1982), others have engaged with issues relating to the interactions between the two sectors (see Lipton, 1980; Tacoli, 1998; and Dercon and Hoddinott, 2005).

In spite of the prevalence of rural-urban interactions in developing countries, much remains to be learnt about their welfare impacts. This thesis extends the discussion on rural-urban linkages by examining – for Ghana – two of the main forms of such interactions: migration and remittance flows. In addition to exploring the determinants of these specific linkages, we examine their impacts on poverty and welfare, using data from the 1998/99 Ghana Living Standards Survey (GLSS). The academic and public interest in issues relating to poverty reduction further makes the study's focus particularly pertinent.

It is worth mentioning from the outset that the classification of localities into *rural* and *urban* is not a settled issue. As noted by Hugo, Champion, and Lattes (2001), urban settlements are often identified on the basis of specific criteria and rules, whilst the residual (non-*urban*) areas are classified as *rural*. These criteria and rules – one or more

of which may be adopted – include population size threshold[1], population density, the availability of specific municipal amenities, and political or legal status. Thus, there is a tendency for differences to exist in the definitions used by countries, or even in the definitions employed by the same country at different times. In the 2001 Rural Poverty Report, the International Fund for Agricultural Development (IFAD) observes:

> *"The most common definition of the [population size borderline] is 5,000 persons, as in India; often it is 2,500 persons or fewer, as in Mexico, or 10,000 or more, as in Nigeria. Other countries, including Brazil and China, do not specify a population size but use various characteristics, from typical metropolitan facilities to legal or political status"* (IFAD, 2001; p. 17).

Irrespective of the particular set of criteria a country uses to demarcate settlements into *rural* and *urban*, it is clear that the rural-urban distinction can be blurred in practice.

In Ghana, a population threshold of 5,000 is commonly used to classify settlements as *urban*, and all other localities – those with a population size less than 5,000 – are designated *rural* (see Huq, 1989; and GSS, 2000b). Since the available data for the present study are based on this classification scheme, this is our adopted definition. Even though the delineation of localities into *rural* and *urban* can often be controversial, this classification is still relevant for highlighting disparities and linkages within a country, so long as it is done with the recognition that for some localities, this characterisation may be debatable.

1.2 Background

1.2.1 Ghana's rural and urban sectors

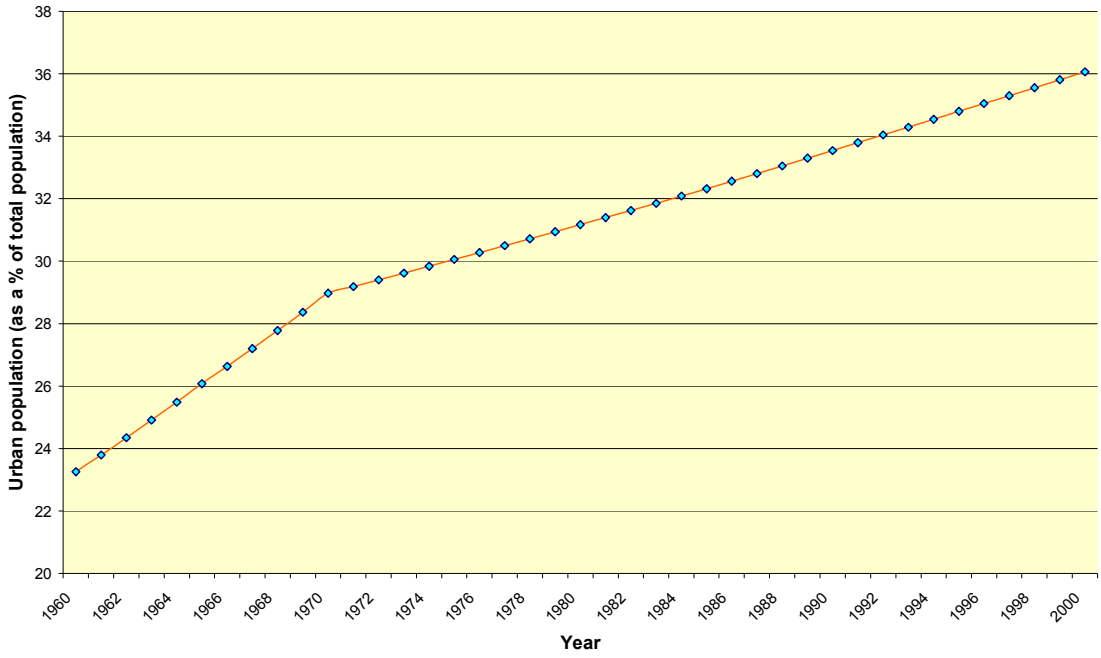
Although the majority of Ghana's population reside in rural localities, urbanisation has been rising over the years (see Figure 1). Between 1960 and 2000, the urban share of the population increased by more than 12 percentage points, reaching a level of 36.1 percent in 2000. According to Ghana's 2000 population and housing census, the three most urbanised Regions are Greater Accra, Ashanti, and Central, with urban population shares of 87.7 percent, 51.3 percent, and 37.5 percent, respectively. Significantly, the

[1] Even with respect to this threshold, differences exist amongst countries.

three Regions in the northern part of the country have the three lowest urbanisation levels; the urban population shares for the Upper East, Upper West, and Northern Regions are 15.7 percent, 17.5 percent, and 26.6 percent, respectively. It has been suggested that Ghana's rising urbanisation is due to increased rural-to-urban migration and the reclassification of some settlements from *rural* to *urban* status on the attainment of the 5,000 population threshold (see Huq, 1989).

Ghana's rural localities are characterised by a predominantly agricultural and informal economy, and account for the bulk of the nation's agricultural output. A key characteristic of rural settlements is the lack of reasonably adequate infrastructure and basic amenities. The urban sector, on the other hand, is home to the country's industries and businesses. Although Ghana's unemployment data may not be very reliable, it has been noted that the urban settlements are associated with significant unemployment, compared to the rural areas (Sackey and Osei, 2006). Additionally, economic activity in the urban sector is characterised by non-agricultural self-employment, formal sector employment, and informal activities. It is worth noting also that the provision of basic amenities and infrastructure is skewed toward the urban sector, making rural-to-urban migration an expected objective of many rural residents.

Figure 1: Urbanisation in Ghana



Source: Based on data from the 2003 World Development Indicators

1.2.2 Ghana's rural-urban livelihood differences

The differences in livelihoods between Ghana's rural and urban sectors can be grouped into three categories: differences in asset portfolio, differences in activities and options, and disparities in welfare context. Since households' livelihood activities and options are highly linked to their asset portfolios, it goes without saying that rural-urban differences in assets largely account for the disparities in livelihood activities (and options). Similarly, differences in the kind of livelihood activities available to residents of rural and urban areas contribute to the disparities in welfare contexts between the two sectors.

a) Differences in asset portfolio

A useful way of discussing assets is to classify them into five forms of capital: physical, natural, financial, human, and social capital (Ellis, 1999). Physical capital refers to

manufactured items, such as household durables and farm equipment. Natural capital, on the other hand, describes any natural resource, whereas financial capital describes financial assets. Human capital is the accumulation of knowledge, skill, or health, whilst social capital is the access to social support usually acquired through a network of kin, friends, and/or acquaintances (Ellis, 1999). In both rural and urban sectors, the range of asset ownership (or access) spans all five forms mentioned. Differences exist, however, in the composition of assets between the two sectors.

On the whole, Ghana's rural and urban households exhibit similarities and differences in asset holdings. Apart from owning a greater variety of physical assets than their rural counterparts, the physical assets owned by urban households are usually more expensive. Moreover, an urban household may additionally own a physical asset (for example, a house or a corn mill) in a rural locality. Even though households in Ghana usually do not own (but rather have access to) natural capital, rural households tend to have greater access to this asset. Access to financial capital is generally difficult for many households, irrespective of location, whereas urban households generally have better access to educational and health facilities (and personnel). Besides having appreciable access to social capital, rural households' access to social support tends to be more uniformly distributed, relative to what pertains in urban areas. In urban centres, all else being equal, a household's level of social capital is very much influenced by the extent to which members are active in a church or a social organisation.

b) Differences in means of livelihood

In the rural areas, the main means of livelihood is agriculture, with households predominantly engaged in farming, fishing or livestock rearing. Urban residents, on the other hand, tend to engage mainly in non-agricultural activities, including both white-collar and blue-collar jobs. A large number of urban residents work in Government Ministries and Departments, the educational sector, the health sector, and formal financial institutions. Many others, however, are self-employed, petty traders, artisans, commercial drivers or street food vendors.

It should be emphasised, that in both rural and urban sectors, households are adept at exploring ways of making ends meet. As a result, it is very common for households –

and even individuals – to engage in multiple economic activities, some of which may not fit the stereotype for the sector in question. In the rural sector, for instance, a typical household may diversify its livelihood by engaging in a non-agricultural activity. Such activities include petty trading, the sale of palm wine, and the operation of a corn mill. Naturally, where one of the members of a rural household is an artisan, the household benefits from a greater leverage in diversifying its income source. The following narrative illustrates the scope for livelihood diversification in Ghana's rural localities:

> *"Ameena from Adaboya, Ghana is married with three children, ages 7, 10, and 16. Her village sits 8 kilometres from the nearest road, an hour from the nearest telephone. With Ameena's concentrated effort, her household has managed to join the ranks of those few families in Adaboya that are better off. Ameena makes and sells malt and rice; she gathers sheanuts to store and sell, and she has her own farm and assists her husband on his farm. She also mentions repaying a loan to purchase peanut seeds and having money left over to reinvest in the businesses. Her entrepreneurship and diverse portfolio of activities and assets is typical of the others in the study who have escaped poverty. During the interview, she proudly told the researchers that all her children are educated"* (Narayan, Chambers, Shah, and Petesch, 2000, p. 64).

Another important rural livelihood strategy is the offering of support to a household member to migrate to another locality, with the hope that the migrant would subsequently send remittances to the household regularly. Closely linked to this strategy is the practice of *kin-fostering* – that is, the practice of children living under the care of relatives (other than their parents) for a prolonged period of time. Rural households and "sent-out" migrants may arrange for one party to foster a relative. Indeed, kin-fostering is a common means by which Ghana's rural dwellers migrate to the urban areas. Additionally, there is the potential for the kin-fostered individual to subsequently serve as a link facilitating the migration of other relatives or friends to his/her locality of residence.

In the urban centres, some households engage in petty trading and/or back-yard gardening to supplement their budget. Similarly, some urban white-collar employees take up a second job, such as commercial driving (for example, driving of a taxi) in the

evenings and during weekends. Urban households' livelihood diversification strategies also include links with the rural sector. Examples of these links are:

- An urban household might occasionally receive food items from a rural household;
- An urban female resident can arrange for a rural dweller (often her mother) to provide care for her (urban dweller's) baby;
- An urban household might keep a farm or a cottage industry in a nearby village.

c) Rural-urban differences in welfare context

Although welfare levels in Ghana's urban sector are reckoned to be higher than the levels in the rural sector, many urban households face difficult living conditions. Rural-urban differences in asset composition and livelihood options generate welfare contexts that reflect severe constraints for both rural and urban households; differences, nevertheless, can be identified in the nature of the constraints. Regardless of the difficulties facing these households, opportunities exist for some to make significant welfare gains.

A major difficulty facing Ghana's rural households is the low productivity characterising their agricultural activities. Apart from the rudimentary nature of rural agricultural technology, many rural households find agricultural inputs prohibitively expensive. Furthermore, since rural households are much more dependent on natural capital, especially land, they are very vulnerable to uncertainties associated with the weather. In many farming communities, for instance, the lack of access to irrigation implies farm outputs are highly dependent on adequate rainfall. Moreover, agricultural price fluctuations constitute the bane of many rural households.

The lack of basic infrastructure and amenities is one of the key features of rural life, contributing to the low living standards. The absence of good roads, decent toilet facilities, adequate educational and health services, and potable water affects just about every aspect of a rural household's livelihood, as illustrated by the following:

> *"Bad or nonexistent roads emerge as problems for six of the seven rural communities visited. Men in Twabidi point out that their road becomes impassable during the rainy season. Also, truck drivers charge very high fees to transport farmers' crops because of the rough road. As a result, the men say, a large share of their harvest remains on the farms, creating post-harvest losses and deterring farmers from improving yields"* (Narayan and Petesch 2002, p. 24).

Notwithstanding the fact that in comparison with the urban sector, the nominal cost of living is low in rural areas, the incomes of many rural households are too low to keep them out of poverty.

The welfare context of rural households is not entirely dismal though; with the appropriate intervention, some households are able to escape poverty. A key route for rural households to escape poverty is education. The education of a member to a reasonably high level can often help enhance the household's welfare significantly. This explains why many rural households attempt to help members with academic promise acquire higher education; the resources required for this investment are, however, often beyond the capacity of these households.

Notably, education is not the only means by which rural dwellers are able to secure significant welfare improvements. Other channels for welfare enhancements include interventions from Governmental initiatives, Non-Governmental Organisations, or individuals, as illustrated by the following account of a rural dweller:

> *"Even though life was tough for me, I never gave up hope. I started helping people on their farms in exchange for food. This enabled me to feed my family and even sell some at times. Soon, somebody gave me his [cocoa] farm to look after, and I decided to intercrop the [cocoa] with oil palm trees. This went very well, and when I harvested, I had enough money to start my own farm. With hard work and determination, we have about four different oil palm plantations now. I have been able to put up a house here in Twabidi and another at Asotwe, in the Ashanti region where I migrated from"* (Narayan et al. 2000, p. 65)

The above narrative further reflects the significant level of social capital that can be available to rural households.

The infrastructure and social amenities available in the urban sector definitely exceed what is available in rural areas. For example, the average urban household does not reside very far from the nearest school, hospital or clinic. Furthermore, in addition to the typical urban household enjoying relatively good roads, many of these households have access to electricity and potable water. Although a large number of urban households often are unable to afford the use of some of these services, these households generally enjoy greater access to these facilities than their rural counterparts.

It is worth stressing though, that owing to the high costs of living in urban centres, poor urban households are often compelled to live in slums, and eke out a living under deplorable circumstances. Pollution, congestion, and sanitation-related problems also face many of Ghana's urban residents, and not just those living in slums; the associated health hazards render children especially vulnerable. Regarding child care, many mothers – in both urban and rural areas – combine full-time child care duties with full-time economic activities. It is thus common to find mothers providing care for their babies whilst street vending or selling their wares at the market place.

1.3 Motivation and main research questions

Given the livelihood differences between Ghana's rural and urban households, it is not surprising that various linkages exist between the two sectors. In view of the desire to increase wellbeing, households and individuals are constantly exploring ways of enhancing their welfare. Thus, for instance, if a rural resident perceives that urban living standards are higher than that of rural areas, it is logical for him/her to attempt to establish an appropriate link for tapping into the welfare advantages enjoyed in the urban sector. Similarly, an urban household would want to link up with the rural sector if there is an aspect of rural livelihood that can be exploited to enhance their welfare. In essence, households and individuals try to establish livelihood trajectories that span rural and urban sectors, and possibly beyond.

In Ghana, migration and remittance flows constitute two of the main forms of linkages between rural and urban sectors. Whilst the prevalence of these specific linkages is generally acknowledged, the associated welfare impacts have not received adequate attention in empirical research. There are definitely at least a few empirical studies that

examine welfare impacts of Ghana's migration and/or remittances (see, for example, Litchfield and Waddington, 2003; Adams, 2006). These studies, however, generally do not focus on the rural-urban dimension. To date, there has been no empirical analysis – as far as can be ascertained – of the welfare impact of migration (or remittance flows) between Ghana's rural and urban sectors. Indeed, with regards to migration, discussions of the rural-urban dimension often focus on rural-to-urban migration, even though available data suggest that the incidence of urban-to-rural migration is significant.

The aim of this thesis is to fill the highlighted gaps in the literature. The principal issues of interest are the extent to which migration and remittances affect poverty and welfare. In the context of rural-urban interactions, the following main research questions will be addressed:

i) What factors influence migration?

ii) What is the impact of migration on the welfare of in-migrants?

iii) What factors influence remittance flows?

iv) What is the impact of remittances on recipients' welfare?

v) What are the poverty impacts of migration and remittances?

The first two questions will be tackled in chapter six, whilst answers to the third and fourth will be the focus of the seventh chapter, with the fifth question addressed in chapter eight.

The relevance of this study stems from:

i) The importance of rural-urban linkages in Ghana;

ii) The policy relevance of knowing the poverty and welfare impacts of migration and remittances.

The prevalence of rural-urban linkages – especially migration and remittance flows – underscores their importance to Ghana's households. Since migration and remittances are integral components of livelihoods in Ghana, knowledge of their welfare (especially poverty) implications will be useful in formulating policies for rural and urban development. For instance, if these activities are found to have significant positive welfare impacts, planners and policy makers might want to put in place structures to enhance them.

1.4 Organisation

In the next chapter, we review the Ghana poverty and welfare literature, focusing on the more basic themes. The third chapter revisits the issue of Ghana's rural-urban welfare disparities by providing a more comprehensive discussion. Chapter four discusses the literature on migration, as well as that of remittances. In view of the importance of data and methodology to empirical research, chapter five discusses these and provides a justification for the study's choice of methodological approach. Chapter six is devoted to an empirical analysis of migration, focusing on factors that influence these movements as well as migration's impact on migrants' welfare. Similarly, chapter seven analyses remittance flows between rural and urban sectors, highlighting their impacts on recipients' welfare. The poverty implications of migration and remittances form the thrust of the eighth chapter. The ninth chapter concludes the thesis.

Chapter Two:
A Review of the Ghana Poverty and Welfare Literature

2.1 Introduction

Academic interest in Ghana's living standards is by no means a recent phenomenon. Prior to 1988, however, data constraints played a big role in limiting the number and coverage of such studies. In general, topics covered by the Ghana welfare literature may be categorised into two: poverty and welfare distribution. Whilst it is not always easy to make a clear distinction, some studies concentrate on poverty (for example, Boateng, Ewusi, Kanbur, and McKay, 1992; and GSS, 2000c), and others focus on welfare distribution (for example, Canagarajah, Mazumdar, and Ye, 1998).

This chapter provides a survey of some of the issues that have emerged in studies on living standards in Ghana, with a view to shedding light not only on what has been done, but also on the gaps in the literature. Even though broader issues relating to welfare distribution will be captured, the bulk of this review focuses on the poverty literature, owing to its domination of the Ghana welfare studies. It is worth noting that this review will be mainly confined to an examination of the literature's coverage of the basic issues about poverty and welfare. In particular, aspects of the literature that explore links between welfare and migration (or remittances) are covered in a different chapter.

The next section begins with a brief review of some poverty conceptual issues, and is followed by a discussion of how poverty has been conceptualised and measured in studies on Ghana. The third section discusses the literature's evidence on Ghana's poverty profile. In the fourth section, we present key findings from studies that emphasise welfare distribution in Ghana. Given the increasing importance of qualitative welfare studies, section five is devoted to a discussion of issues emerging from such studies on Ghana. A summary and thoughts for further research conclude the chapter.

2.2 Meaning and measurement of poverty

2.2.1 Some conceptual issues

Poverty lends itself to various definitions. It has been defined as "the state of one who lacks a usual or socially acceptable amount of money or material possessions"[2]. An alternative description of poverty has been given as "the state of not having enough money to take care of basic needs such as food, clothing, and housing".[3] In the words of Ravallion (1994, p.3), "'Poverty' can be said to exist in a given society when one or more persons do not attain a level of economic well-being deemed to constitute a reasonable minimum by the standards of that society." These definitions give a flavour of the diversity of perceptions about poverty, two major ones being the *absolute* and *relative* concepts.

Absolute poverty has been described as "subsistence below minimum, socially acceptable living conditions, usually established based on nutritional requirements and other essential goods" (Lok-Dessallien, n.d; p.2). The concept of relative poverty, on the other hand, is based on the argument that a person's welfare relative to that of the rest of society is what matters for determining whether he/she is poor. This view of poverty captures the idea that poverty is highly related to the time and social milieu in question. Whilst absolute poverty can be eradicated, relative poverty implicitly captures the notion that poverty can never be completely eradicated. It is also worth noting that owing to the important role of non-monetary factors in the construction of wellbeing, many economists currently place a high premium on the notion that poverty is multi-dimensional (see, for example, Bourguignon and Chakravarty, 2002; Hulme and McKay, 2005; and Duclos, Sahn, and Younger, 2006). As a result, even where data constraints preclude the incorporation of non-monetary elements into poverty analysis, it is crucial to be aware of poverty's multi-dimensional aspects.

Although differences in poverty perceptions have informed the formulation of different poverty measures, central to poverty measurement is the notion of a poverty line. A

[2] According to the Merriam-Webster English Dictionary.
[3] According to the Encarta World English Dictionary.

poverty line is a welfare threshold that delineates the poor from the non-poor. In practice, however, the use of poverty lines is not without problems. Firstly, since poverty lines can be absolute or relative, they are subject to criticisms relating to the absolute versus relative notions of poverty. In this respect, the main criticism of absolute poverty lines is that the identification of the poor without consideration of the broad societal welfare context is unrealistic; on the other hand, the use of relative poverty lines can result in a reduced emphasis on the elimination of abject poverty. Apart from the above limitations, a major drawback of the poverty line is the arbitrariness inherent in its determination; irrespective of the specific value of the line, it can be argued that, all else being equal, individuals whose estimated welfare levels are marginally higher than this threshold might be indistinguishable (from a well-being perspective) from those whose estimated welfare levels are marginally below the line. This tendency for poverty lines to retain some element of arbitrariness has contributed to the increase in studies that employ poverty dominance analyses[4] (see, for example, Justino and Litchfield, 2003; and Madden and Smith, 2000).

To a large extent, the various measures of poverty are functions of the poverty line. a key poverty index is the Foster-Greer-Thorbecke (FGT) class of measures. The FGT generic index yields indicators of poverty incidence, depth, or severity, depending on whether a non-negative parameter takes the value 0, 1, or 2, respectively (see Foster, Greer, and Thorbecke, 1984). Chapter eight of the present study makes use of this index to analyse the impact of migration and remittances on aggregate poverty.

2.2.2 Insights from the Ghana poverty studies

In conformity with the general poverty literature, studies on Ghana's poverty generally agree that poverty is a lack of the basic standard of living deemed to be a reasonable minimum by society. Additionally, the Ghana literature highlights the multi-dimensional concept of poverty. Thus, these studies also address issues such as access to health care and education, powerlessness, and social exclusion (see GSS, 1995;

[4] Poverty dominance analysis refers to the application of stochastic dominance techniques to the analysis of poverty. This facilitates the possibility of making generalisations about changes in aggregate poverty measures that are robust to the choice of the poverty line.

Norton, Aryeetey, Korboe, and Dogbe, 1995; and Narayan, Patel, Schafft, Rademacher, and Koch-Schulte, 1999). Even though there is a general endorsement of the multi-dimensional notion of poverty, the use of a money-metric welfare measure is very common in the quantitative literature. Studies on Ghana have typically used consumption expenditure as the money-metric welfare measure (for example, Glewwe and Twum-Baah, 1991; Coulombe and McKay, 1995; and GSS, 1995). On the whole, in measuring poverty in Ghana, the studies have adopted the conventional approach; a poverty line is first defined on the basis of the preferred money-metric welfare measure, after which an aggregate measure[5] of poverty is computed. We now turn attention to a brief discussion of how poverty lines have been defined in the Ghana poverty literature.

Initial studies employing data from the Ghana Living Standards Survey (GLSS) often used a relative or semi-relative[6] poverty line. In their analysis of welfare in Ghana, Glewwe and Twum-Baah (1991) defined two relative poverty lines – the upper one was the third decile of real consumption expenditure, and the lower line was the first decile of real consumption expenditure. Boateng et al. (1992) also employed relative poverty lines, with the upper and lower lines being defined as two-thirds and one-third of the mean real per capita household expenditure respectively. The use of semi-relative poverty lines is common in studies employing data from the first two or three waves of the GLSS. An often-used semi-relative poverty line is a fraction of mean per capita household consumption expenditure for 1987/88 (see GSS, 1995; and Coulombe and McKay, 1995). Using this approach, GSS (1995) obtained an upper poverty line (in constant May 1992 Accra prices) of 132,230 cedis per person per year; the lower poverty line was 99,173 cedis. The use of some fraction of the national minimum wage has also been used in the literature. For example, in their study of Ghana's income and expenditure profiles, Seini, Nyanteng, and van den Boom (1997) defined two poverty lines; the minimum wage defined the upper line, whilst the lower poverty line was set at one-half of the minimum wage. This yielded – in cedis per capita per year – upper and lower poverty lines of 43,800 and 21,900, respectively. Clearly, a drawback of the

[5] The aggregated measure of poverty has usually been the FGT class of poverty indices.
[6] This has typically been a fraction of a particular year's mean household consumption expenditure per adult equivalent. Defined this way, the poverty line retains some relativity, since it is linked to the distribution of a welfare measure. It however, also reflects some semblance of absoluteness by being held fixed when measuring and analysing poverty in different years.

above studies is the element of arbitrariness characterising the choice of the poverty line(s).

In a more recent study, GSS (2000c) uses an absolute poverty line, thus making a significant departure from the practice of employing relative lines in Ghana poverty studies. Using calorie requirements as a guide, two poverty lines are set. The lower (or food) poverty line (700,000 cedis per equivalent adult per year) is based on the average expenditure required to obtain the minimum nutrition requirements, assuming household members consume the average consumption basket. Thus, the lower poverty line represents an extreme poverty threshold; it is a level of expenditure at which calorie requirement can be met only by devoting the whole budget to food or by consuming an inferior food basket. The upper poverty line (900,000 cedis per equivalent adult per year) for 1998/99 was obtained by augmenting the food poverty line with the non-food expenditure of individuals whose total consumption spending is equivalent to the food poverty line. Even though there is no official poverty line for Ghana, the Ghana Statistical Service (2000c) upper poverty line has gained wide acceptance.

As hinted earlier, not all the Ghana poverty studies employ a money-metric welfare measure. In an inter-temporal cross-country analysis of forty-seven countries (including Ghana), Sahn and Stifel (2002) adopt a "nutrition poverty line" by using anthropometric measures of nutrition as indicators of welfare. Given that past chronic nutritional and health deprivation tend to leave children 'stunted' – i.e., shorter than expected for their age and gender, relative to a reference population – the specific well-being indicator employed by Sahn and Stifel is the standardized height-for-age of children between the ages of three and thirty-five months. The standardized height-for-age of children – also known as the height-for-age z-score (HAZ) – is thus used as a proxy for the accumulation of nourishment and health over the entire life of a child. Following standard practice, the nutritional poverty line chosen was a z-score of –2; incidentally, this poverty line is also arbitrary. Apart from offering the advantage of similar measurement techniques across surveys[7], the approach of Sahn and Stifel renders the use of exchange rates and deflators unnecessary owing to the non-monetary nature of the welfare measure.

[7] The study used Demographic and Health Surveys (DHS) data.

2.3 Poverty profile

A common feature of many of the studies on poverty in Ghana is a description of the pattern of poverty across various subgroups. These subgroups could be ecological, demographic, or simply, based on type of employment or economic activity (see Boateng et al., 1992; Glewwe and Twum-Baah, 1991; and GSS, 1995). Some of the studies (usually those that employ regression analysis) also attempt to identify poverty correlates (see Asenso-Okyere, Nsowah-Nuamah, and Alberson, 1997), i.e., the main characteristics associated with poor households. We now turn attention to the literature's evidence on poverty patterns and correlates in Ghana.

2.3.1 Poverty patterns

The analysis of Ghana's poverty patterns has often been carried out in terms of rural-urban comparisons, and there is a general consensus that rural poverty incidence is higher than that of the urban sector. It appears though, that Ghana's rural-urban welfare gap has widened over the past four decades. This is because older studies on Ghana's economy suggest that the gap was not large in the 1960s and early 1970s (see, for example, Knight, 1972; and Omaboe, 1966). In highlighting the literature's evidence on Ghana's poverty patterns, the discussion will rely heavily on data provided by GSS (2000c).

Using the upper poverty line (900,000), the proportion of Ghanaians that were poor in 1991/92 was 51.7 percent. An analysis of the geographical pattern of poverty shows that in each of the ecological zones (i.e., Coastal, Forest, and Savannah), more than half of the rural population were poor, with poverty incidence being highest (73 percent) in Rural Savannah (see Table 1). On the contrary, each of Accra and the other urban localities (Coastal, Forest, and Savannah) recorded a poverty incidence of less than 40 percent. The lowest poverty incidence (23.1 percent) was registered in Accra. In discussing poverty patterns, however, the contribution of an area to poverty is probably more important than the area's poverty incidence. Regarding the contribution of the various geographical localities to the overall incidence of poverty, patterns similar to that of the incidence of

poverty are observed. The highest contribution of an urban locality (Forest) to poverty was 5.5 percent, whilst the lowest contribution of a rural locality (Coastal) was 14.4 percent. Rural Forest contributed the most (35.3 percent) to national poverty incidence, and the lowest contribution of 3.7 percent was by Accra. In 1991/92, not only did rural residents account for the bulk of poverty incidence in Ghana, but the majority of Ghana's severely poor were located in rural areas.

The geographical pattern of poverty in 1998/99 is quite similar to what is observed in 1991/92. The overall proportion of the population with a welfare measure below the poverty line was 39.5 percent. Again, more than 80 percent of these poor individuals were located in rural areas. The lowest incidence of poverty (3.8 percent) was recorded in Accra, and the highest (70 percent) was found in the Rural Savannah (see Table 2). A comparison of each ecological zone's population share with its contribution to national poverty reflects a general pattern of urban localities dominating rural areas. It must be noted however, that even though this pattern was consistent in 1991/92, the pattern in 1998/99 did not reflect a complete domination of the rural sector by the urban. This is because whilst poverty incidence in the Urban Savannah was 43 percent, that of the Rural Forest was 38 percent. More importantly, although the Urban Savannah accounted for 4.8 percent of Ghana's population, the proportion of the country's poor living in this ecological zone was 5.2 percent. The Rural Forest, on the other hand, had a share of 31.6 percent in the national population, but had a smaller share (30.4 percent) of Ghana's poor residing in the ecological zone. This specific result notwithstanding, on the whole, rural communities accounted for a greater part of poverty in 1998/99, irrespective of whether the poverty index in question was the incidence (P0), depth (P1), or severity (P2). More generally, the poverty patterns relating to the depth and severity of poverty – and the respective contributions to the national figures – are similar to those observed for the head count ratio.

It is worth mentioning that a notable finding of the Ghana poverty literature is the high incidence of poverty amongst farmers, especially those in the food crop sub-sector. In both 1991/92 and 1998/99, poverty incidence was highest amongst food crop farmers, with the second highest incidence being registered by export farmers (see GSS, 2000c). Furthermore, in 1991/92 and 1998/99, farmers accounted for at least 65 percent of Ghana's poverty incidence, with the contribution of food crop farmers being close to 60 percent. Thus, the 1990s witnessed a pattern of overrepresentation of farmers (especially food crop

farmers) among the poor. Although the pattern of poverty across different segments of Ghana's labour force was, on the whole, not markedly different between 1991/92 and 1998/99 (see GSS, 2000c), it should be noted that in 1991/92, there was very little difference in poverty incidence between Food crop farmers and Export farmers (68.1 percent and 64 percent, respectively). In 1998/99 however, a noticeable disparity was observed; 59.4 percent for Food crop farmers and 38.7 percent for Export farmers. On the whole, since most of Ghana's farmers are in the rural sector, it is not surprising that – in terms of the labour force – farmers account for the bulk of poverty incidence.

The discussion in this subsection makes a strong case for the view that rural poverty is considerably higher than urban poverty. Moreover, the pattern observed using the upper poverty line accords with the pattern depicted by the lower poverty line, with the latter even accentuating the rural-urban differences for both 1991/92 and 1998/99. We therefore do not discuss in detail the rural-urban poverty patterns that are based on the lower poverty line, except to note the following:

i) In 1998/99, the rate of extreme poverty in Accra was less than two percent, whilst the corresponding rate for Rural Savannah was almost sixty percent (see GSS, 2000c).

ii) In each of GLSS3 and GLSS4, more than eighty-five percent of all extremely poor individuals lived in rural areas (see GSS, 2000c). In this connection, we note that Seini et al. (1997) – using GLSS1 and GLSS2 data and poverty lines based on the minimum wage – found that roughly 85 percent of all extremely poor individuals lived in rural areas.

Table 1: Indices of poverty by location, 1991/1992; Poverty line = 900,000 cedis

	Population share (%)	Average welfare ('000 cedis)	Poverty indices			Contribution to national poverty		
			P0	P1	P2	C0	C1	C2
Accra	8.2	1,844.8	0.231	0.051	0.017	3.7	2.2	1.6
Urban Coastal	8.7	1,433.6	0.283	0.070	0.024	4.7	3.3	2.3
Urban Forest	11.0	1,618.9	0.258	0.064	0.022	5.5	3.8	2.8
Urban Savannah	5.3	1,321.2	0.378	0.136	0.069	3.9	3.9	4.2
Rural Coastal	14.2	1,085.5	0.525	0.161	0.067	14.4	12.3	10.8
Rural Forest	29.6	938.0	0.616	0.227	0.106	35.3	36.4	35.8
Rural Savannah	23.1	762.9	0.730	0.305	0.161	32.6	38.1	42.5
All	100.0	1,130.8	0.517	0.185	0.088	100.0	100.0	100.0

Source: Ghana Statistical Service (2000c).

Table 2: Indices of poverty by location, 1998/1999; Poverty line = 900,000 cedis

	Population share (%)	Average welfare ('000 cedis)	Poverty indices			Contribution to national poverty		
			P0	P1	P2	C0	C1	C2
Accra	8.8	2,468.5	0.038	0.008	0.002	0.8	0.5	0.3
Urban Coastal	7.8	1,769.9	0.242	0.070	0.028	4.8	3.9	3.4
Urban Forest	11.8	2,005.0	0.182	0.051	0.020	5.4	4.3	3.6
Urban Savannah	4.8	1,191.6	0.430	0.114	0.042	5.2	4.0	3.1
Rural Coastal	14.6	1,248.3	0.452	0.141	0.061	16.7	14.8	13.3
Rural Forest	31.6	1,297.9	0.380	0.107	0.044	30.4	24.4	20.8
Rural Savannah	20.6	826.8	0.700	0.323	0.178	36.6	48.0	55.5
All	100.0	1,412.1	0.395	0.139	0.066	100.0	100.0	100.0

Source: Ghana Statistical Service (2000c).

2.3.2 Poverty correlates

Obtaining information about the characteristics of the poor is, obviously, very important. Apart from helping to determine causes and consequences of poverty, it has relevance for the formulation of effective poverty-reducing policies. Despite the fact that determining the direction of causality is often difficult, it is reasonable to presume that there is usually a two-way causality. Due mainly to the availability of data from the various GLSS waves, several studies on Ghana's poverty have highlighted the main poverty characteristics or correlates. These correlates relate to the following, amongst others:

i) Access to (and utilisation of) basic needs such as health care, education, potable water, and toilet facilities
ii) Health status
iii) Educational status
iv) Access to electricity
v) Household asset ownership
vi) Household size and economic dependency

This section reviews knowledge available in the literature on the characteristics of the poor in Ghana. Some of these studies are based mainly on cross tabulations computed from GLSS data (see Boateng et al., 1992; GSS, 1995; and Appiah, Demery, and Laryea-Adjei, 2000). Other studies, however, employ regression analyses to help determine the relative importance of these correlates (see Asenso-Okyere et al., 1997; and Coulombe and McKay, 2003). Useful insights have also been offered on poverty correlates by qualitative studies (see Norton et al., 1995; and Narayan et al., 1999). While this sub-section does not provide definite answers regarding the causes and consequences of poverty in Ghana, it does present useful findings from the literature that shed light on factors associated with poverty.

According to GLSS4, in the urban areas of Ghana, 57.8 percent of the very poor[8] did not make any health-related consultation when ill or injured, whilst the corresponding proportions amongst the poor and the non-poor were 59 percent and 44.1 percent, respectively (see Table 3). A similar result was found for the rural areas; amongst the very

[8] The "very poor" refers to persons lying below the lower poverty line, whilst the "poor" refers to those below the upper poverty line.

poor, only 35 percent made some form of consultation when ill or injured, with the respective proportions for the poor and non-poor being 38 percent and 42.9 percent (see Table 4). These results suggests that, compared to the non-poor, individuals who are poor (including the very poor) are less likely to consult a doctor, nurse, pharmacist, or some other health care provider when ill or injured.

Table 3: Type of health personnel consulted by ill or injured individuals in urban areas, 1998/1999

	Poverty status			
	Very poor	***Poor***	***Non-poor***	***All***
Doctor	21.1	15.8	37.2	33.9
Nurse/midwife	7.7	10.5	4.8	5.5
Medical Assistant	4.1	6.4	3.1	3.4
Pharmacist	3.0	0.9	6.9	6.0
Other	6.2	7.5	4.0	4.5
Did not consult	57.8	59.0	44.1	46.6
All	100.0	100.0	100.0	100.0

Notes: "Very poor" correspond to those lying below the extreme poverty line, "poor" to those below the poverty line but above the extreme poverty line, and "non-poor" to those above the poverty line
Source: Ghana Statistical Service (2000c).

Table 4: Type of health personnel consulted by ill or injured individuals in rural areas, 1998/1999

	Poverty status			
	Very poor	***Poor***	***Non-poor***	***All***
Doctor	7.4	12.6	17.8	14.0
Nurse/midwife	7.6	12.2	8.9	9.0
Medical Assistant	12.3	8.5	7.9	9.3
Pharmacist	0.9	0.8	1.4	1.1
Other	6.8	4.0	6.9	6.5
Did not consult	65.0	62.0	57.1	60.2
All	100.0	100.0	100.0	100.0

Notes: "Very poor" correspond to those lying below the extreme poverty line, "poor" to those below the poverty line but above the extreme poverty line, and "non-poor" to those above the poverty line
Source: Ghana Statistical Service (2000c).

A survey[9] conducted by the Ghana Statistical Service in 1997 throws further light on health status patterns in Ghana. Some selected results from the survey are shown in Table 5 and Table 6. Of those surveyed, 1.0 percent suffered from some form of physical or mental handicap. For rural Ghana, the percentage of the surveyed population that were physically or mentally handicapped was 1.1 percent; the corresponding proportion for the urban sector was 0.9 percent. Within the lowest quintile of the rural sector, 1.5 percent of the population were physically or mentally handicapped, whilst the richest quintile of the rural sector had 1.0 percent of the population suffering from physical or mental handicap. The distributional pattern of physical or mental disability in urban areas lend further support to the view that the health status of the poor, on the whole, tend to be lower than that of the non-poor. Amongst the urban lowest quintile, 1.6 percent of the population are physically or mentally challenged, but within the fourth and fifth quintiles, the corresponding proportions are 0.4 percent and 0.2 percent, respectively. Although these statistics do not provide unambiguous conclusions about causality, they suggest, that compared to the non-poor, the poor are more likely to suffer physical and/or mental disability; this might result from their inability to access appropriate nutrition and health care. The statistics additionally suggest that the physically or mentally disabled are more prone to being poor, ceteris paribus.

The time taken to reach the nearest health facility is an important health-related index. Clearly, in many critical illnesses or injuries, the time taken to reach a health facility can be crucial in determining the survival or otherwise of the patient. Even for less serious illnesses or injuries, the time taken to reach the nearest health facility can discourage the ill/injured from seeking appropriate medical care, and this can have long-term negative consequences. According to GSS (1998), for 47.1 percent of all persons surveyed, the nearest health facility is more than thirty minutes away; within the rural and urban sectors, the proportions of persons who lived more than thirty minutes from the closest health facility were 61.4 percent and 19.6 percent, respectively. These statistics reflect the disadvantaged position of rural – relative to the urban – dwellers in terms of access to health care. An examination of similar statistics for poverty quintile groups within rural and urban sectors is insightful. Amongst the urban population surveyed, the proportions of the poorest and next poorest quintiles that live within thirty minutes of

[9] The Core Welfare Indicators Questionnaire (CWIQ) Survey.

the nearest health facility are, respectively, 70.6 percent and 73.5 percent. The equivalent proportions for the fourth and fifth quintiles are 87.5 percent and 90.3 percent, respectively. For the rural surveyed population, however, 48.7 percent of persons within the richest quintile are located within thirty minutes of the closest health facility, with the corresponding proportion for the lowest quintile being as low as 30 percent. An important message emerges from these figures; relative to the non-poor, poor individuals tend to face higher prices for health care when time cost is taken into account.

Table 5: Selected health-related indicators (%) for rural Ghana, 1997

Indicator	National	Rural All	Poverty quintile				
			1	2	3	4	5
Physically or mentally handicapped	1.0	1.1	1.5	1.1	1.0	0.7	1.0
Nearest heath facility more than 30 minutes away	47.1	61.4	70.0	66.9	62.7	56.2	51.3

Source: Ghana Statistical Service (1998)

Table 6: Selected health-related indicators (%) for urban Ghana, 1997

Indicator	National	Urban All	Poverty quintile				
			1	2	3	4	5
Physically or mentally handicapped	1.0	0.9	1.6	1.4	0.7	0.4	0.2
Nearest heath facility more than 30 minutes away	47.1	19.6	29.4	26.5	20.2	12.5	9.7

Source: Ghana Statistical Service (1998)

We now take a look at the pattern of child[10] nutritional status. According to the 1998 and 2003 Ghana Demographic and Health Surveys (GDHS), the nutritional status of rural children – as measured by the incidence of stunting[11], wasting[12], and underweight[13] children – lags behind that of the urban sector. With each of the three measures of child malnourishment, and in both 1998 and 2003, the urban sector fared better than the rural (see Table 7). In 1998, for example, the urban incidence of stunting was 14.3 percent, whilst the rural rate was 29.7 percent. On the whole, the rural-urban disparities in child nutritional status are somewhat most pronounced in respect of stunting.

Table 7: Child nutritional status; 1998 and 2003

1998	**Incidence (%) of stunting**	**Incidence (%) of wasting**	**Incidence (%) of underweight children**
National	25.9	9.5	24.9
Urban	14.3	6.5	15.6
Rural	29.7	10.5	27.9
2003			
National	29.9	7.1	22.1
Urban	20.5	6.6	15.4
Rural	34.5	7.4	25.4

Source: The 1998 and 2003 Ghana Demographic and Health Surveys (GDHS)

Between 1998 and 2003, stunting incidence worsened at all levels (that is, national, urban, and rural), whereas the incidence of wasting registered improvements at the national and rural levels, but remained virtually unchanged at the urban level (see Table 7). With respect to the proportion of children who were underweight, there were modest gains – between 1998 and 2003 – at the national, urban, and rural levels. It is significant to note also, that on the whole, the 2003 Ghana Demographic and Health Survey shows a general trend of worsening incidence of child malnourishment as one moves from the richest wealth quintile to the poorest. For example, the 2003 national stunting incidence

[10] This refers to those less than five years old.
[11] A stunted child is one whose height-for-age index is more than two standard deviations below the median of an international reference population.
[12] A wasted child is one with a weight-for-height score in excess of two standard deviations below the median for the reference population.
[13] A child is described as underweight if his/her weight-for-age index is less than the median of the reference population by more than two standard deviations.

for the richest to the lowest wealth quintiles are 13.2 percent, 24.2 percent, 30.2 percent, 31.5 percent, and 41.8 percent, respectively (GSS, NMIMR, and ORC Macro 2004).

Sahn and Stifel (2002) have noted that of the three indicators of child nutritional status, stunting proxies best the standard of living. They argue, that unlike the other indicators of child nutritional status, the incidence of stunting is a long-term indicator of child nutritional well-being or health, and is unaffected by acute short-term bouts of illness/stress occurring close to the time of measurement. In the light of this observation, Ghana's rural-urban disparities in stunting incidence and the worsening of stunting incidence at all levels (between 1997 and 2003) assume greater importance.

The poor in Ghana are also often characterised by relatively low levels of education. As noted by Glewwe and Twum-Baah (1991), poor households tend to be headed by people with no (or very little) formal education. Boateng et al. (1992) also found very low literacy rates among the poor and in the rural sector. Even though the study did not identify a clear direction of causality between educational level and poverty, it notes that, "… a vicious circle may be in operation. Individuals without education are only able to obtain low wages and are thus more likely to be poor; such households may then be less likely to send their children to school, or will send them for shorter periods, compared with the average household because of the high monetary and opportunity costs involved" (Boateng et al. 1992, p.55).

The link between education and poverty is further supported by data from the 1997 survey by GSS (1998). Within the rural communities surveyed, the literacy rate[14] amongst the fourth and topmost quintile were 47.5 percent and 62.1 percent, respectively, whereas the rate amongst the poorest quintile was less than 24 percent (see Table 8Table 8: Selected education-related indicators (%) for rural Ghana, 1997Figure 8). In the urban sector, although higher literacy rates are observed, the pattern of disparity amongst quintiles is similar; 85 percent of persons within the richest quintile were literate, but the literacy rate amongst the lowest quintile was 40.3 percent (see

[14] This was the rate for persons more than fifteen years old.

Table 9). Other education-related statistics are also illuminating. In both rural and urban sectors, there is an inverse association between education-related remoteness and welfare; the proportion of persons who live more than 30 minutes from the nearest primary or secondary school increases as the welfare level – as proxied by the poverty quintile – falls. The strong correlation of poverty in Ghana with low levels of education has also been given credence by multivariate studies. For example, in employing regression analyses to establish the relative importance of poverty correlates in Ghana, Coulombe and McKay (2003) found education to be one of the most significant correlates. Furthermore, in a logit model analysis of poverty in Ghana, Asenso-Okyere et al. (1997) found the educational level of the household head to be inversely related to the odds of being poor.

Table 8: Selected education-related indicators (%) for rural Ghana, 1997

Indicator	National	Rural All	Poverty quintile				
			1	2	3	4	5
Literacy rate (>15 years)	47.9	39.9	23.7	29.5	37.5	47.5	62.1
Nearest primary school more than 30 minutes away	7.9	10.4	14.3	12.6	10.3	8.8	5.9
Nearest secondary school more than 30 minutes away	65.2	77.4	85.5	81.1	77.5	74.2	68.8

Source: Ghana Statistical Service (1998)

Table 9: Selected education-related indicators (%) for urban Ghana, 1997

Indicator	National	Urban All	Poverty quintile				
			1	2	3	4	5
Literacy rate (>15 years)	47.9	63.0	40.3	51.4	63.3	73.5	85.0
Nearest primary school more than 30 minutes away	7.9	3.0	6.0	4.2	2.8	1.1	0.9
Nearest secondary school more than 30 minutes away	65.2	41.5	56.9	49.8	40.3	33.5	27.3

Source: Ghana Statistical Service (1998)

Another major characteristic of the poor in Ghana is low access to assets and amenities. This is also evident from both quantitative and qualitative studies. According to survey data collected in 1997 (GSS, 1998), the proportion of persons in urban communities who use electricity for lighting is 78.4 percent, whereas in the rural sector, the proportion is only 15.5 percent. Within both rural and urban sectors, richer welfare quintiles tend to have higher proportions of persons who use electricity for lighting. For example, in the rural sector, the incidence of usage of electricity for lighting amongst the richest quintile is 28.6 percent, but for the lowest quintile, the proportion is 6.2 percent. In the urban sector, 58.2 percent of the lowest quintile use electricity for lighting, whilst the corresponding proportion for the topmost quintile is 95.4 percent.

On the basis of GLSS4, 37.8 percent of urban households have pipe-borne water in their houses, but the corresponding proportions for the poor and the very poor are roughly 15 percent and 8 percent respectively (GSS, 2000c). Also, amongst the fourth and fifth quintiles in the urban sector, the proportions of households having pipe-borne water in their houses are roughly 29 percent and 47 percent respectively. For households within the lowest quintile, however, less than 10 percent live in houses with pipe-borne water

(see Table 10). In the rural sector, wells and natural sources constitute the main source of drinking water for most (about 78 percent of) households (GSS, 2000c). For the richest quintile in the rural sector, about 62 percent of households use wells or natural sources as the main source for drinking water. For the poorest and second quintiles in the rural sector however, the corresponding proportions are roughly 92 percent and 83 percent, respectively. From Table 10 and Table 11, it is evident that rural-urban disparities in main sources of drinking water are wide.

Table 10: Main source of drinking water of households by standard of living quintile – urban areas, 1998/99

	Quintile					Poverty status			
	1	2	3	4	5	Very poor	Poor	Non-poor	All
Inside pipe	8.3	12.3	23.1	29.2	46.5	8.0	15.1	37.8	34.1
Water vendor	0.8	1.7	2.7	7.5	8.5	1.0	1.7	7.3	6.4
Neighbour/private	28.3	30.7	28.1	33.2	27.0	31.4	28.6	28.9	29.1
Public standpipe	16.3	22.2	21.0	13.9	11.2	17.2	24.9	13.5	14.4
Well	24.1	15.6	14.1	10.7	4.4	20.2	15.2	7.8	9.2
Natural source	22.4	17.5	11.0	5.6	2.5	22.2	14.4	4.8	6.8
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ghana Statistical Service (2000c).

Table 11: Main source of drinking water of households by standard of living quintile – rural areas, 1998/99

	Quintile					Poverty status			
	1	2	3	4	5	Very poor	Poor	Non-poor	All
Inside pipe	0.6	0.8	3.1	4.0	8.6	0.7	0.7	5.2	3.4
Water vendor	0.1	0.7	2.3	2.3	4.2	0.3	0.7	2.9	1.9
Neighbour/private	1.7	2.5	3.7	6.8	12.5	1.7	3.0	7.6	5.4
Public standpipe	5.8	12.9	9.1	15.3	13.0	7.1	13.7	12.4	11.1
Well	59.2	44.2	41.9	37.0	30.8	55.7	44.1	36.6	42.7
Natural source	32.5	38.9	39.9	34.6	30.9	34.6	37.8	35.3	35.4
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Ghana Statistical Service (2000c).

Other poverty correlates identified in the literature include low access to land and other assets, large household size, low educational attainment of household head, and – as reflected in the discussion of poverty patterns – residing in the rural and/or Savannah areas and being employed in the agriculture sector (Asenso-Okyere et al., 1997; Seini et al.,

1997; and GSS, 1995). It is important to note that the general picture painted by statistics on human development indicators, as well as other measures of welfare – such as assets ownership and access to key amenities – is supported by qualitative studies. For example, these studies strongly suggest that the poor often suffer complications in illnesses or even death[15] mainly due to the distance from the nearest health facility or as a result of their inability to pay for the cost of health care (see, for example, Narayan et al., 2000). In general, by providing anecdotal accounts of the poor, qualitative Ghana welfare studies often highlight important aspects of welfare deprivation that are often difficult to capture in quantitative studies. It is evident from the qualitative studies that in many cases, the deprivation of the poor is acute and pervasive, making them vulnerable to being trapped in a cycle of chronic deprivation.

2.3.3 Inter-temporal poverty comparisons

Most (if not all) of the quantitative studies of poverty in Ghana carry out some form of poverty comparison. The comparisons are varied. These include inter-sectoral (already discussed), inter-temporal, and cross-country comparisons. On the whole, inter-temporal comparisons outnumber the cross-country type. This is apparently due to the difficulty in obtaining suitable data for carrying out a cross-country welfare study. Most of the inter-temporal comparisons of poverty in Ghana cover the post-1986 era. This is partly because comprehensive data for this kind of national level analysis became available through the Ghana Living Standards Surveys. Additionally, earlier surveys were not comparable.

Quantitative studies on poverty in Ghana unanimously report an increase in poverty incidence between 1987/88 and 1988/89, and a more-than-offsetting decline between 1988/89 and 1991/92. For example, GSS (1995) found that, even though Ghana's incidence of consumption poverty increased from 36.9 percent to 41.8 percent between 1987/88 and 1988/89, the rate declined from 41.8 percent to 31.4[16] percent between

[15] Kanbur and Mukherjee (2006) have pointed out that conventional aggregate measures of poverty fail to capture poverty-causing deaths, and that these deaths – all else being equal – even lead to a reduction in the index of poverty. This, obviously, is a limitation that needs to be addressed.
[16] GSS (2000c) revised this rate of poverty incidence after improving the measurement of both the standard of living index and the poverty line.

1988/89 and 1991/92. GSS (1995) further reports that all the specified geographical zones – that is, Accra, Other Urban, Rural Coastal, Rural Forest, and Rural Savannah – experienced a worsening in the incidence of consumption poverty between 1987/88 and 1988/89. Furthermore, there were increases in the depth and severity of poverty – nationally and across almost all localities – between 1987/88 and 1988/89. With the exception of Accra, all localities experienced a decline in the incidence of consumption poverty between 1988/89 and 1991/92 (Coulombe and McKay, 1995; and GSS, 1995). Furthermore, the depth and severity of poverty at the national level – and in all localities – declined between GLSS2 and GLSS3.

According to GSS (2000c) and Aryeetey and McKay (2004), between 1991/92 and 1998/99, the incidence of poverty dropped from 51.7 percent to 39.5 percent (see Table 1 and Table 2). Aryeetey and McKay (2004) further note that this reduction in poverty incidence is statistically significant at the 1 percent level. An examination of disaggregated rates of poverty incidence between the two periods reveals non-uniform changes in consumption poverty. While some localities experienced small or moderate reductions in poverty incidence, poverty incidence worsened (by about 5 percentage points) in the Urban Savannah (see Table 1 and Table 2), despite this change lacking statistical significance (Aryeetey and McKay 2004). Localities that experienced the largest declines in poverty incidence are the Rural Forest (23.6 percentage points) and Accra (19.3 percentage points). With regard to changes in poverty incidence between 1991/92 and 1998/99, Aryeetey and McKay (2004) have noted, that in addition to the statistically significant change at the national level, localities that registered statistically significant changes were Accra and the Rural Forest[17]. In view of the sizable sample share – on average, more than 30 percent – of the Rural Forest, the overall reduction in poverty incidence between 1991/92 and 1998/99 was considerably influenced by this locality's improvement in consumption level. In terms of the depth of poverty, there was a reduction at the national level, and most localities registered an improvement. Similarly, there was an overall decline in the severity of poverty, even though the Rural Savannah and Urban Coastal zones experienced an increase – although not statistically significant (Aryeetey and McKay 2004) – in this index.

[17] In all three cases, the changes in poverty incidence were statistically significant at the 1 percent level.

2.4 Welfare distribution

Although findings from the Ghana poverty literature do provide some insight into the distribution of welfare between various population groups, these studies typically focus on identifying the poor and measuring the extent of poverty. As a result, little emphasis (if any) is placed on the overall distribution of welfare. Whilst relatively few Ghana-specific studies explore the distribution of welfare, some significant attempts have been made in this direction (see, for example, Canagarajah et al., 1998; and Coulombe and McKay, 2003).

An important element of some of the Ghana welfare studies is the attempt to explore linkages between inequality and poverty. Changes in welfare distribution have been analysed in the context of changes in poverty incidence across various population categories. Such attempts have employed aggregate indices of welfare distribution, such as the Gini coefficient and the generalised entropy class of inequality indices. These indices have been employed to investigate changes in overall welfare inequality, as well as within-group and between-group inequality changes.

Using the entropy class of inequality measures and stochastic dominance, Canagaragah et al. (1998) found evidence for an overall improvement in inequality between 1987/1988 and 1991/92. They note that poverty reduction over the period is attributable principally to improvements in average levels and the distribution of incomes in the informal and non-farm sectors in areas outside Accra. In an analysis of survey data for 1991/92 and 1998/99, Coulombe and McKay (2003) suggest an increase in inequality at the lower end of the welfare distribution, and a possible reduction at the upper end. They also observe considerable variations in inequality changes across different ecological zones. Coulombe and McKay (2003) further note that in those areas (Accra and the Rural Forest) where poverty reduction was very apparent, inequality declined. For the rest of the country, however, no major changes in poverty were found, and inequality tended to rise.

One other important finding of Canagaragah et al. (1998) relates to the influence of education on inequality. They argue that majority of the poor in Ghana are unable to attain educational levels beyond primary schooling. This, coupled with the very low

income return to primary education, results in the poor deriving fewer benefits (relative to the non-poor) from education. As a consequence, Canagaragah et al. (1998) note, that rather than reducing inequality, education increases it. On the whole, the findings of Canagaragah et al. (1998) and Coulombe and McKay (2003) suggest – at least, with reference to Ghana's experience in the 1980s and 1990s – that major changes in the degree of welfare inequality do often occur at the lower end of the distribution. Given the potential link between education and rural-to-urban migration, it is very probable that rural-urban linkages have significant implications for the poverty-education-inequality relationships.

Even though an examination of within-group versus between-group inequality is dependent on the groupings employed, there are suggestions that Ghana's welfare inequality is mainly driven by within-group variations (see, for example, Vanderpuye-Orgle, 2002; and Sahn and Stifel, 2002). The importance of within-group inequality does not imply that between-group inequality is irrelevant, since small changes in between-group inequality can have a considerable impact on overall inequality. In the case of Ghana, Vanderpuye-Orgle (2002) has stressed the importance of between-group inequality by observing that variations in inequality levels – over the period 1987-1999 – were mainly driven by changes in between-group (that is, the spatial component of) inequality. Vanderpuye-Orgle further finds evidence for an increase in polarization[18]over the period.

2.5 Issues emerging from the qualitative studies

Even though the quantitative studies' depiction of Ghana's poverty profile is largely mirrored by the qualitative ones, the two sets of studies are not always in agreement. A key area of disagreement is the direction of change in poverty over time, especially over the 1990s. Whilst the quantitative studies generally indicate a reduction in poverty incidence during the 1990s, the qualitative studies strongly suggest otherwise. What exactly accounts for this discrepancy is not easy to pinpoint. It does appear however, that the different methodologies of the two traditions – quantitative studies often employing objective welfare measures, whilst qualitative studies usually adopt

[18] Polarisation refers to the clustering of the welfare distribution, such that welfare levels are very similar within each cluster, but very different between any pair of clusters (see Zhang and Kanbur, 2001).

subjective measures of well-being – have a bearing on the conflicting results that sometimes emerge. Given that qualitative well-being studies are often carried out by non-economists, these studies offer insights that should complement knowledge gained from the quantitative studies (see Appleton and Booth, 2005). In what follows, we highlight some of the insights into Ghana's living standards provided by qualitative poverty/welfare studies.

Compared to the Ghana Living Standards Surveys, the surveys upon which qualitative welfare studies are based are usually less comprehensive in coverage. This notwithstanding, these studies provide rich insights into perspectives – of poor individuals, households, and communities – about poverty and their livelihoods, and invariably complement the information provided by the quantitative approaches. These participatory Ghana poverty studies emphasise the point that poverty is multi-faceted and defies easy conceptualisation. They further show that although Ghana's poverty is widespread, it is more concentrated in the northern part of the country. For instance, in her study of local poverty and wealth inequality of the Upper East Region of northern Ghana, Whitehead (2006, p.296) notes:

> *"In Ghana's Upper East, where levels of well-being are shockingly low and levels of poverty exceedingly high, poverty was persistent for a large proportion of households, with only a small minority having enough resources 'to solve their problems' and to invest."*

A key message from the qualitative studies is that poverty reflects food and material deprivation, vulnerability to ill health and death, insecurity, lack of assets, humiliation, social marginalisation, and powerlessness (Kunfaa, Lambongang, Dogbe, and Mackay, 1999; Narayan et al., 1999; and Norton et al., 1995). In their three-phase study of fifteen Ghanaian communities, Norton et al. (1995) used qualitative and participatory research methods to explore perceptions of poverty and vulnerability, as well as factors that underpin poverty in Ghana. The study links the poorest members of communities to factors such as disability, age coupled with the lack of adult children, widowhood and childlessness. The sentiment expressed below by a group of men at Beo Tankou (as reported by Norton et al. 1995, pp. 27-28) illustrates the multidimensional nature of poverty in Ghana:

"Most of us have no money or food and nothing to sell for money. That is why death is so rampant in this village. Take the death of this small boy this morning for example, the boy died of measles. We all know he could have been cured at the hospital. But the parents had no money and so the boy died a slow and painful death not out of measles but out of poverty".

Locality and gender influences have also been identified in the perceptions of poverty, as well as in the priority needs of the poor. Narayan et al. (1999) observe a tendency for women to define poverty in terms of food insecurity, whereas for men, poverty is linked to material asset deprivation. According to Norton et al. (1995), rural communities attach more importance to community level assets than urban communities. They identify the priority needs of rural communities – as perceived by the communities themselves – as including food security, access to health care and education, supply of water (for both consumption and production), access to credit, and improvements in transportation infrastructure. On the other hand, the concerns of urban communities include lack of adequate employment opportunities, availability of small enterprise credit, poor water supply and inadequate infrastructure. Rural communities, according to Kunfaa et al. (1999), are more concerned about food security, ownership of assets (including wives and children), and disability, whilst urban dwellers focus on issues such as lack of employment opportunities, housing, social service provision, access to capital, and skills acquisition.

The relatively more intense poverty in the Rural North is a theme that emerges strongly in Kunfaa et al. (1999) and Norton et al. (1995). Kunfaa et al. found more severe poverty in their three Northern Savannah study sites than in the others. Norton et al. also identified the incidence and depth of poverty to be highest in the rural north, where seasonal chronic food deprivation – especially in the Upper West and Upper East Regions and often affecting entire communities – was also observed. Kunfaa et al. (1999) suggest that the geographical pattern of Ghana's poverty could be traced to ecological and political factors. On the whole, contrary to the message from the quantitative studies, the qualitative literature suggests poverty has probably not decreased in recent years. It should be noted though that direct comparisons of the quantitative literature with the qualitative studies should be done with care. This is mainly because the qualitative studies were relatively limited in coverage. Furthermore,

with respect to the qualitative literature, it is often difficult to identify the specific time horizon over which any comparisons of well-being are being made.

On the subject of the survival and coping strategies employed by the poor, the qualitative welfare literature offers extensive insight – such as an enhanced highlighting of welfare dynamics – often lacking in quantitative studies. According to Norton et al. (1995) and Kunfaa, Dogbe, MacKay, and Marshall (2002), survival and coping strategies employed by Ghana's poor include the following:

(i) Selling off assets, such as livestock
(ii) Gathering and selling firewood
(iii) Burning and selling charcoal
(iv) Withdrawal of children from school
(v) Depending on social networks, such as collecting loans/remittances from friends and relatives who have migrated
(vi) Migrating in search of employment
(vii) Offering labour to other farmers
(viii) Deceit, fraud, begging, or some other socially demeaning activity.

Whilst there are some commonalities in strategies between rural and urban dwellers, some differences are evident. As observed by Norton et al. (1995), not all coping strategies are available to both rural and urban dwellers. For example, whilst rural residents are often able to fall on the environment (such as chopping and selling firewood) –with its attendant consequences for future livelihoods – in times of need, urban dwellers typically do not have access to such resources. Furthermore, whilst these coping strategies vary in their sustainability, on the whole, their long-run sustainability is doubtful. It is worth noting also that other poverty-related issues have emerged in the qualitative studies. These include the incidence of street children (Anarfi, 1998), rural-to-urban migration of children (Beauchemin, Baffoe, and Avevor, 1999), and food insecurity and malnutrition (International Food Policy Research Institute, 2002), issues that will not be given further discussion at this point.

2.6 Summary

The literature on Ghana's poverty and welfare is dominated by poverty studies, with the quantitative studies often measuring aggregate poverty in terms of consumption expenditure. Other aspects of well-being, such as insecurity of livelihoods, and the diversity of coping strategies are given prominence in the qualitative literature. Notwithstanding the focus on consumption poverty in the computation of aggregate welfare indices, the multidimensional nature of welfare is recognised in both quantitative and qualitative studies.

Despite the widespread nature of Ghana's poverty, the literature makes a strong case for the view that rural poverty is considerably higher than urban poverty. It has also been observed that poverty is more intense in Northern Ghana than in other parts of the country. This is supported by both quantitative and qualitative studies. A pattern of a disproportionate overrepresentation of farmers (especially food crop farmers) among the poor has also been noted. Other poverty correlates identified in the literature include inadequate access to health care and education, lack of assets and amenities, large household size, and low educational attainment of household head. Even though the quantitative studies indicate an overall decline in poverty incidence in the 1990s, this does not emerge clearly from the qualitative literature. The questionable long-run sustainability of the identified poverty coping strategies has been noted.

The literature on welfare distribution provides evidence to suggest the existence of considerable diversity in inequality changes across different segments of the population. Support has also been found for a link between poverty reduction and improvements in welfare distribution. Besides highlighting the importance of both within-group and between-group inequality in Ghana, the literature finds evidence for a possible major role for inequality changes at the lower end of the welfare distribution.

Although the Ghana poverty-welfare literature has covered considerable grounds, there are still a number of issues that have not yet been thoroughly addressed. One of these relates to an explanation of the rural-urban welfare disparities. Are these differences likely to narrow over time? Are there factors that tend to entrench these disparities? What are the prospects for bridging the gap? What are the relative impacts of the

various forms of rural-urban linkages on welfare? To what extent can migration and remittance flows between rural and urban areas alleviate poverty in the two sectors? Even though the welfare literature on Ghana is not completely silent on these issues[19], many of the questions raised have received very little attention so far. Some of these questions will be addressed in the present study.

[19] As noted earlier, the literature review in this chapter was intentionally confined to the more basic issues about poverty and welfare.

Chapter Three:
Ghana's Rural-Urban Welfare Disparities[20]

3.1 Introduction

This chapter takes a look at the evolution of welfare in Ghana, focusing on the nature of rural-urban welfare disparities, and the factors that underpin these. The motivation for such an exercise is informed by the strong connection between these welfare disparities and the various linkages between rural and urban sectors. Focusing mainly on the period, 1991-1999, the chapter specifically aims to:

i. Highlight some aspects of Ghana's welfare distribution in the 1990s;
ii. Present a picture of patterns, differences, and changes in welfare between Ghana's rural and urban areas;
iii. Identify the major influences on the evolution of Ghana's rural-urban welfare; and
iv. Explore the prospects for improving the rural-urban welfare patterns.

The next section presents a compilation of information about rural-urban welfare patterns, whilst the third section discusses plausible explanations for – and prospects for improving – the observed rural-urban welfare patterns. The fourth section concludes the chapter.

3.2 Rural-urban welfare patterns

This section presents information on welfare patterns in rural and urban areas, focusing on the period, 1990 - 2004. The section discusses welfare patterns on the basis of both consumption welfare and other welfare indicators. All references to poverty incidence are based on a poverty line of 900,000 cedis per adult equivalent per annum, measured in Accra January 1999 prices.

[20] This chapter is based on Boakye-Yiadom (2004), a paper presented at the International Conference on Ghana's Economy at the Half Century. Comments by the Conference participants are highly appreciated.

3.2.1 Consumption welfare

A useful starting point is a look at changes in consumption welfare levels between 1991/92 and 1998/99. Table 12 shows the increase in mean consumption welfare between the two survey periods on the basis of rural-urban ecological zones. With the exception of the Urban Savannah zone, all rural-urban ecological zones registered increases in mean consumption welfare, with the largest percentage increase (38.4) occurring in the Rural Forest zone. As suggested by Coulombe and McKay (2003), the Rural Forest's remarkable increase in average consumption welfare is attributable to a favourable cocoa sector performance. The lowest percentage change in mean welfare was –9.8, and it was registered by the Urban Savannah.

Table 12: Changes in mean consumption welfare between 1991/92 and 1998/99, by rural-urban ecological zone

	Urban; absolute change (in cedis)	Urban; percentage change	Rural; absolute change (in cedis)	Rural; percentage change
Coastal	506,770.7	31.03	162,882.1	15.01
Forest	386,095.1	23.85	359,909	38.37
Savannah	-129,576	-9.81	63,906.15	8.38

Source: computed using data from GLSS3 and GLSS4.

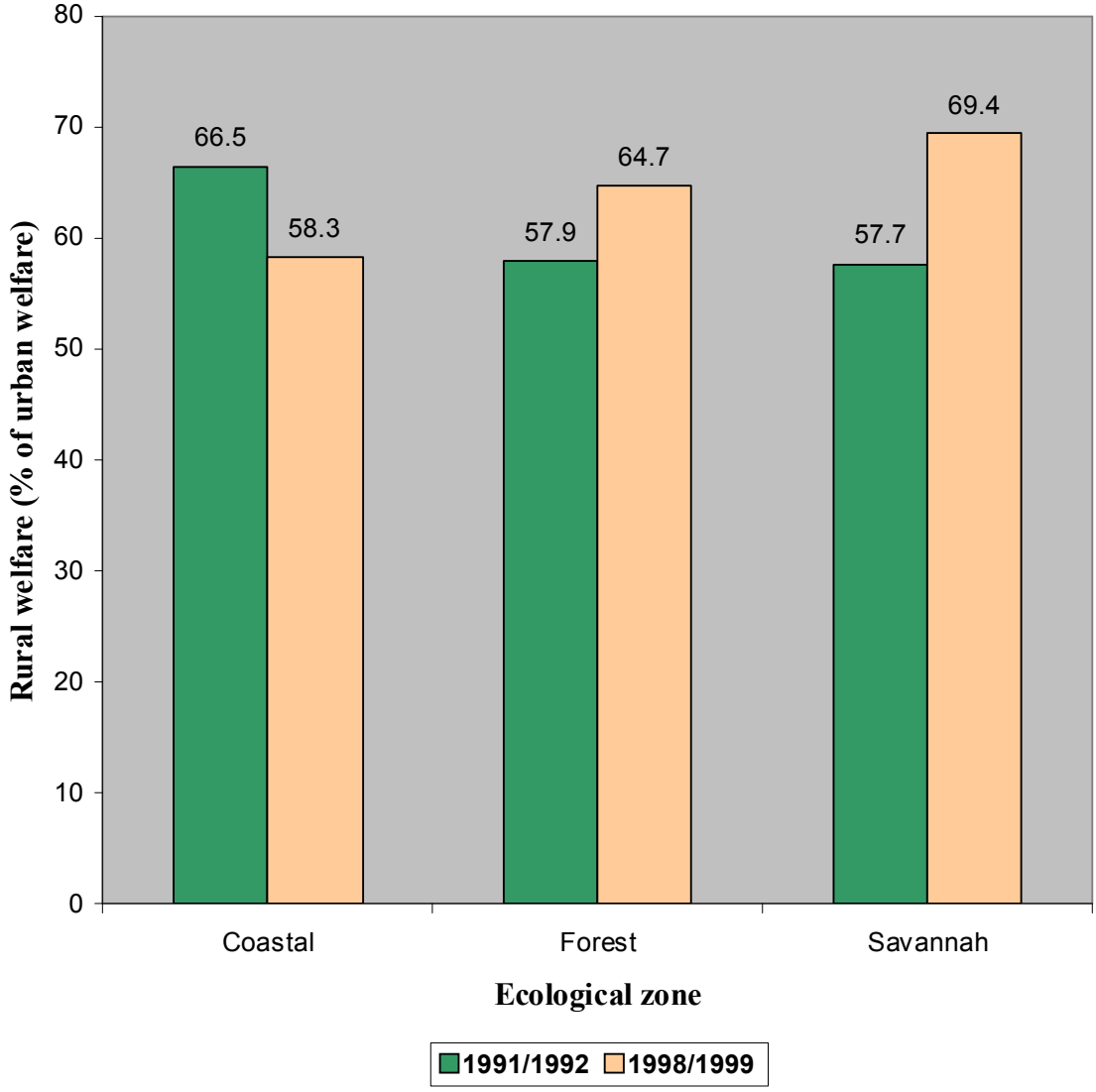
With regard to average consumption welfare, the Coastal zone had the highest in both rural and urban areas in 1991/92, with the Forest and Savannah zones following in that order (see Figure 7 in the Appendix to this chapter). In 1998/99 the Coastal zone again registered the highest average consumption welfare in the urban sector, whilst the Forest zone achieved the highest in the rural sector and the Savannah zone recorded the lowest in both urban and rural sectors (see Figure 8 in the Appendix). In 1991/92, the highest urban-rural welfare gap (measured as urban average welfare less rural average welfare) was found in the Forest zone, with the Coastal zone registering the lowest (see Figure 9 in the Appendix). In 1998/99, however, the lowest urban-rural welfare gap was in the Savannah zone, and the highest was found in the Coastal zone. Between 1991/92 and

1998/99, the urban-rural welfare gap increased in both the Coastal and Forest zones, but fell in the Savannah zone. These statistics show that even though there is no consistent pattern in the relative magnitudes of consumption welfare across ecological zones, the rural-urban differences in these measures are important.

Expressing rural welfare as a percentage of urban welfare, the biggest rural-urban welfare gap (42.3 percentage points)[21] in 1991/92 was registered in the Savannah zone, and the lowest (33.5 percentage points) was recorded in the Coastal zone (see Figure 2). In 1998/99, the order was reversed; the Coastal zone had the largest gap (41.7 percentage points), whereas the smallest gap (30.6 percentage points) was found in the Savannah zone. Thus, in terms of percentage point gaps, the rural-urban welfare gap reduced – between 1991/92 and 1998/99 – in both the Forest and Savannah zones, but increased in the Coastal zone.

[21] That is, rural welfare was 57.7 percent of urban welfare.

Figure 2: Rural welfare as a percentage of urban welfare



The rural-urban disparity in consumption welfare is further evidenced by the proportion of rural versus urban residents represented in the national consumption welfare quintiles. Included in the poorest 20 percent of the population in 1991/92, were 27 percent of the rural population, and only 12 percent of the latter were amongst the richest 20 percent of the national population (see Figure 3). On the other hand, only 5 percent of the urban population were amongst the poorest 20 percent of the national population. Amongst the richest 20 percent of the national population were 37 percent of the urban population. This pattern was repeated in 1998/99. In fact, as shown in Figures 3.2 and 3.3, higher national quintiles were associated with declining proportions of the rural population, and with increasing proportions of the urban population.

Figure 3: Rural-urban representation in national welfare quintiles; 1991/92

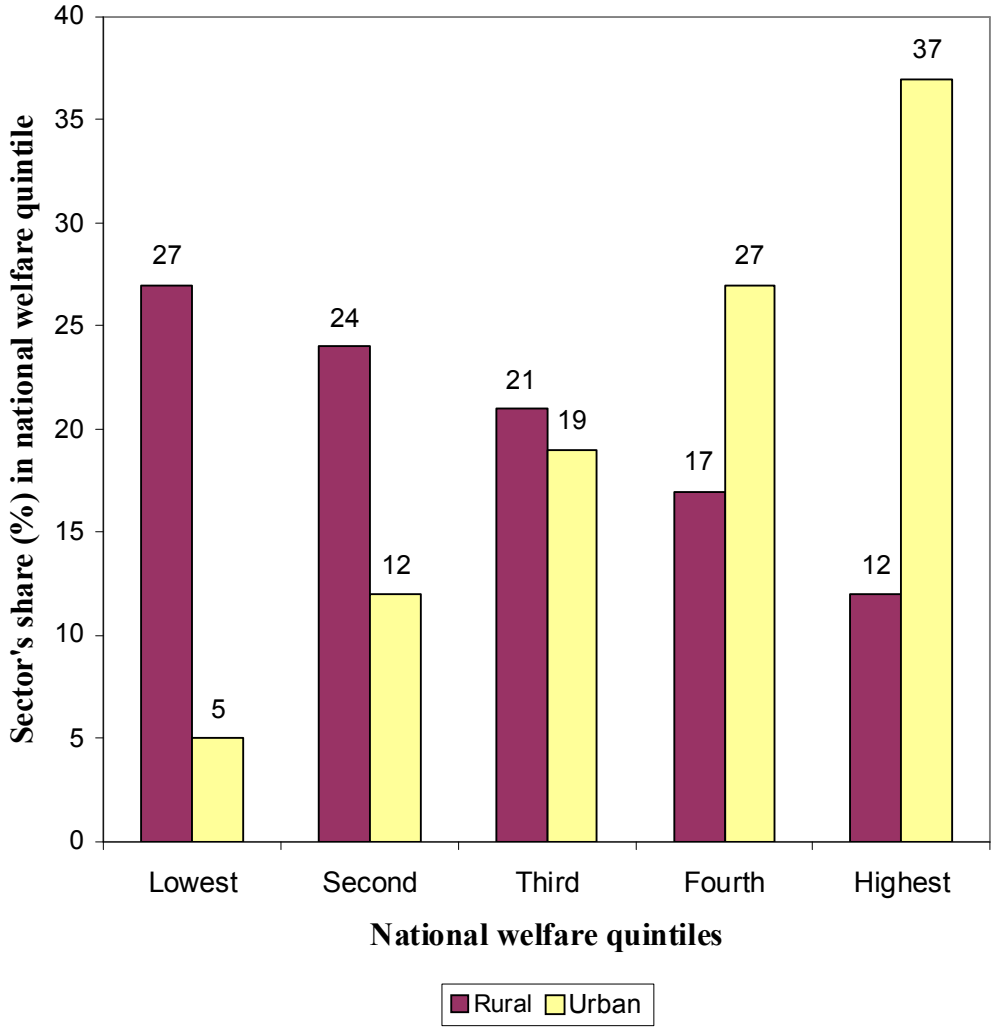
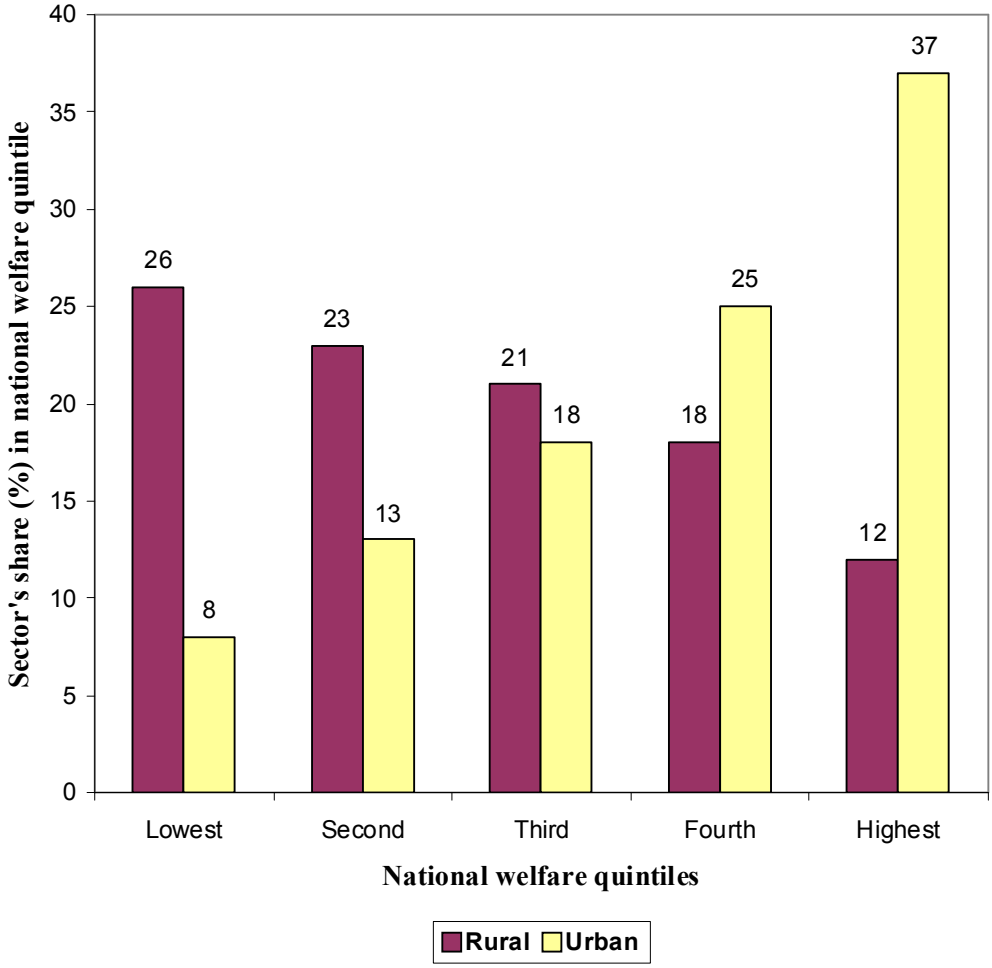


Figure 4: Rural-urban representation in national welfare quintiles; 1998/99



In the context of Ghana's consumption welfare, is relative welfare more important than absolute welfare? This is not an easy question to answer, since a case can be made for either. A focus on absolute welfare is likely to result in increased efforts at reducing absolute poverty, whereas a focus on relative welfare might lead to a greater emphasis on inequality reduction. Given the level of poverty in Ghana, however, it is arguably better for policy makers to place more emphasis on increasing the absolute welfare of the poor, while not neglecting any concerns for inequality reduction. In any case, increasing the absolute welfare of the poor can often result in a decline in inequality.

3.2.2 Poverty incidence

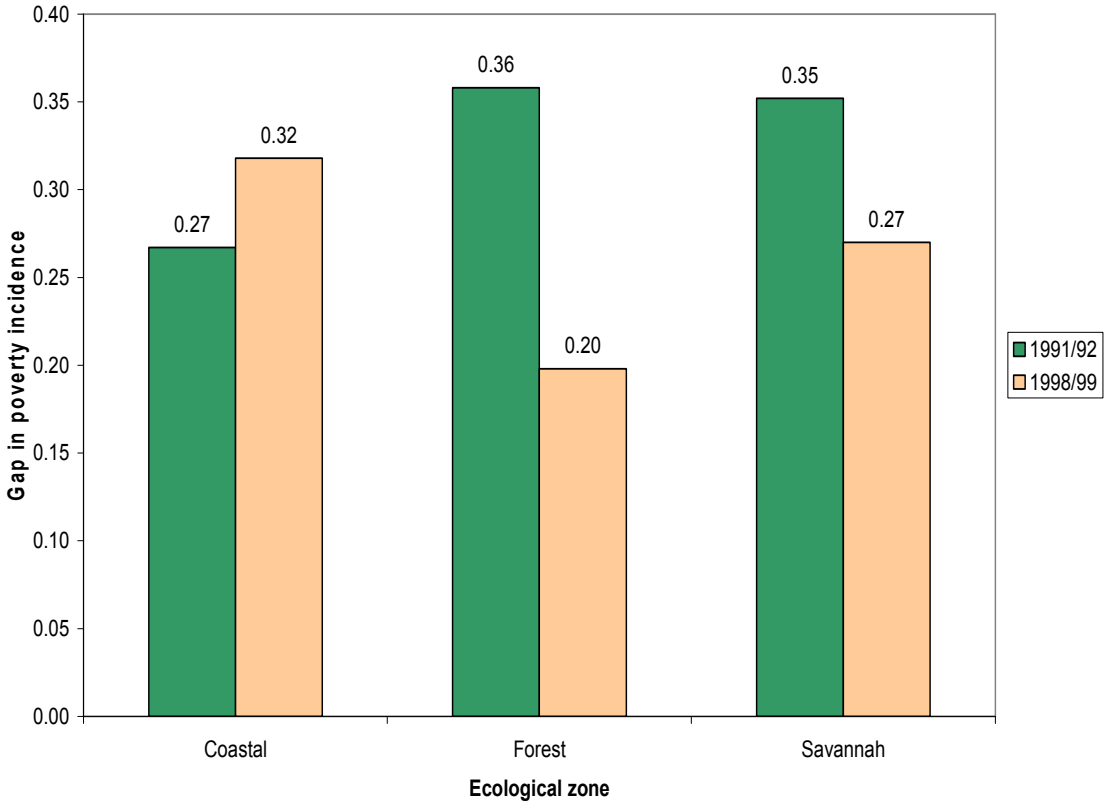
For any given ecological zone (i.e., Coastal, Forest, or Savannah), and in both 1991/92 and 1998/99, rural consumption poverty incidence was higher than the urban incidence. In both 1991/92 and 1998/99, the Savannah zone had the highest consumption poverty incidence in each of rural and urban sectors. In 1991/92, the urban sector's highest poverty incidence was 38 percent (registered in the Savannah zone), but the rural sector's lowest poverty incidence was 53 percent (recorded in the Coastal zone).

In terms of contributions to national poverty, the rural sector contributed more than the urban, irrespective of ecological zone or year. In 1991/92, even though the rural sector's share of the population was 66.9 percent, its aggregate contribution to national poverty was 82.3 percent. Similarly, in spite of its 66.8 percent share of the national population in 1998/99, the rural sector's contribution to national poverty was 77.7 percent. In each of 1991/92 and 1998/99, rural-urban disparities in contributions to national poverty were particularly severe in the Forest and Savannah zones; the rural sector's contributions in each of these zones were consistently more than five times that of the urban sector.

In 1991/92 the lowest rural-urban gap in poverty incidence was 27 percentage points, and it was registered in the Coastal zone, whereas the biggest gap (36 percentage points) was recorded in the Forest zone. In 1998/99, however, the pattern was reversed; the Forest zone registered the lowest rural-urban gap in poverty incidence (20 percentage points), and the highest gap (32 percentage points) was in the Coastal zone (see Figure 5). These statistics partly reflect the remarkable fall in rural poverty incidence – from 61.6 percent to 38.0 percent – that occurred over the period for the Forest ecological zone. Figure 5 further shows that between 1991/92 and 1998/99, the Forest and Savannah zones experienced a decline in the rural-urban poverty incidence gap, but the gap in the Coastal zone increased from 27 percentage points to 32 percentage points. The main message here is that, poverty incidence in the rural sector has consistently been markedly higher than the incidence in urban areas, regardless of ecological zone or survey period. The extent to which the gap in rural-urban poverty incidence has been bridged has, however, varied considerably across ecological zones. The favourable

cocoa sector performance in the latter period is one plausible reason for the observed pattern.

Figure 5: Rural-urban gaps in poverty incidence in the 1990s (gap: percentage point difference between rural poverty incidence and urban poverty incidence)



3.2.3 Health and nutrition

Infant and under-five mortality rates are useful indicators of access to healthcare. Using data collected over the period November 1998 – February 1999, Ghana Statistical Service (GSS) and Macro International Inc. (1999) found a clear disparity in these rates between rural and urban areas. In urban localities, the infant mortality rate was 43 deaths per 1,000 live births, whilst the corresponding rural rate was 68 deaths per 1,000 live births. With regard to under-five mortality, urban areas registered a rate of 77 deaths per 1,000 births, and rural localities had a rate of 122 deaths per 1,000 live births.

Regarding the seeking of medical assistance when ill, most Ghanaians – whether residing in rural or urban areas – do not consult health personnel when ill or injured. As shown in the previous chapter, the consultation of doctors by the urban ill or injured is – in proportionate terms – higher than that of other health personnel. In rural localities, a sizable proportion (though not the majority) of those who consult health personnel do consult doctors. Relative to the urban areas, a smaller proportion of ill/injured individuals in rural areas consult doctors and pharmacists, whereas a higher proportion consult nurses, midwives, and medical assistants.

Children's nutritional status offers valuable insights into a society's well being, and a standard method for capturing this is the use of anthropometric indicators. Table 13 shows – for rural and urban localities – the proportions of children under-five who were malnourished during the 1998 Ghana Demographic and Health Survey (DHS). The table shows the proportions of children who are stunted[22], wasted[23], or are underweight[24]. From the table, rates of malnourishment (and that of severe malnourishment) are consistently higher in rural localities than in urban areas. These strongly suggest that rural welfare lags behind that of urban residents.

Table 13: Rates (%) of malnourishment[25] and of severe malnourishment amongst children under five; 1998 (note: rates of severe malnourishment are in parentheses)

	Height-for-age (Stunting)	Weight-for-height (Wasting)	Weight-for-age (Underweight)
Urban	14.3 (4.8)	6.5 (0.7)	15.6 (2.6)
Rural	29.7 (10.8)	10.5 (1.6)	27.9 (6.1)

Source: Ghana Statistical Service (GSS) and Macro International Inc. (MI) (1999).

[22] A stunted child is one whose height-for-age index is more than two standard deviations below the median of an international reference population.
[23] A wasted child is one with a weight-for-height score in excess of two standard deviations below the median for the reference population.
[24] A child is described as underweight if his/her weight-for-age index is less than the median of the reference population by more than two standard deviations.
[25] These include those who are severely malnourished.

3.2.4 Access to drinking water and toilet facilities

According to the Ghana Statistical Service (2000c), potable water (that is, water from non-natural sources) was the main source of drinking water for just a little over half of rural residents in 1991/92, with more than half of those in the two lowest welfare quintiles using natural water sources (e.g. water from lakes, rivers, and rain water). In urban localities, a sizeable majority of residents (with the proportion rising with welfare quintile) had access to potable water.

In 1998/99, there was a remarkable improvement in access to potable water in rural areas; about 65 percent of rural households had access to potable water, and at least 60 percent of households in each quintile used potable water. Urban households also registered an improvement in access to potable water, but the change was less pronounced, ostensibly due to the relatively high level of access in 1991/92.

Data from the third and fourth waves of the GLSS indicate that pit latrine was the main type of toilet facility used by rural households (GSS 2000c); the proportions of rural households using pit latrines as their main toilet facility were 61.2 percent and 45.3 percent in 1991/92 and 1998/99, respectively. In urban localities, pit latrines were the main type of toilet facility for 29.6 percent of households in 1991/92, but by 1998/99, KVIPs[26] had become the major type, with a 45.2 percentage usage. The proportion of urban households using KVIPs in 1991/92 was 12.6 percent. Between 1991/92 and 1998/99, rural household usage of KVIPs also increased from 3.7 percent to 19.9 percent.

Both GLSS3 and GLSS4 report a wide rural-urban disparity in the usage of flush toilets. The proportions of rural and urban households using flush toilets in 1991/92 were 1.4 percent and 17.6 percent, respectively. The corresponding proportions for 1998/99 were 1.6 percent and 15.2 percent.

[26] KVIP is the abbreviation for Kumasi Ventilated Improved Pit latrine.

3.2.5 Education

Data from the 2003 Ghana Demographic and Health Survey (GDHS) consistently indicate higher school attendance ratios in urban areas, relative to those of rural localities (GSS, NMIMR, and ORC Macro, 2004). At the primary level, the urban net attendance ratio (NAR)[27] was 68.3 percent, and the corresponding rural ratio was 55.8 percent. The urban and rural gross attendance ratios (GAR)[28] for primary schooling were 105.2 percent and 89.6 percent, respectively. The urban NAR and GAR at the secondary level were 45.1 percent and 52.6 percent respectively, whereas the corresponding rural ratios were 26.4 percent and 30.8 percent.

In the light of the above, educational attainment in urban localities is expected to be higher than that of rural areas. According to the 2003 GDHS, 15.2 percent of urban males – aged six years and above – have no formal education, whilst the corresponding figure for the rural sector is 33.3 percent (see Table 14). A similar pattern is found amongst females; in urban areas, 25.9 percent of females had never had formal education, whereas rural females without formal education accounted for 46.8 percent of the female sample. Plausible reasons for the lack of formal education for some people include the inability to pay school-related fees, family pressures – such as parents engaging children with family farm or business activities, and truancy. These statistics provide further evidence in support of the prevalence of rural-urban welfare disparities in Ghana. It can also be seen from Table 14 that there is some gender gap in education. Factors accounting for this gap are largely cultural. In Ghana, partly because households are normally headed by males, the education of males traditionally takes precedence over that of females amongst many ethnic groups. Furthermore, the education of females – especially in rural areas – is often disrupted by pregnancy and/or early marriage.

[27] The NAR for primary schooling is the percentage of the primary school age (6-11 years) population that is attending primary school. An analogous definition applies to the NAR for secondary schooling, with the relevant age group being 12-18 years.

[28] The GAR for primary schooling is the total population of students attending primary school – irrespective of age – expressed as a percentage of the official primary school-age population. Thus, the GAR can be greater than 100 percent. The GAR for secondary schooling has an analogous definition.

Table 14: Educational attainment (%) by rural-urban residence and gender

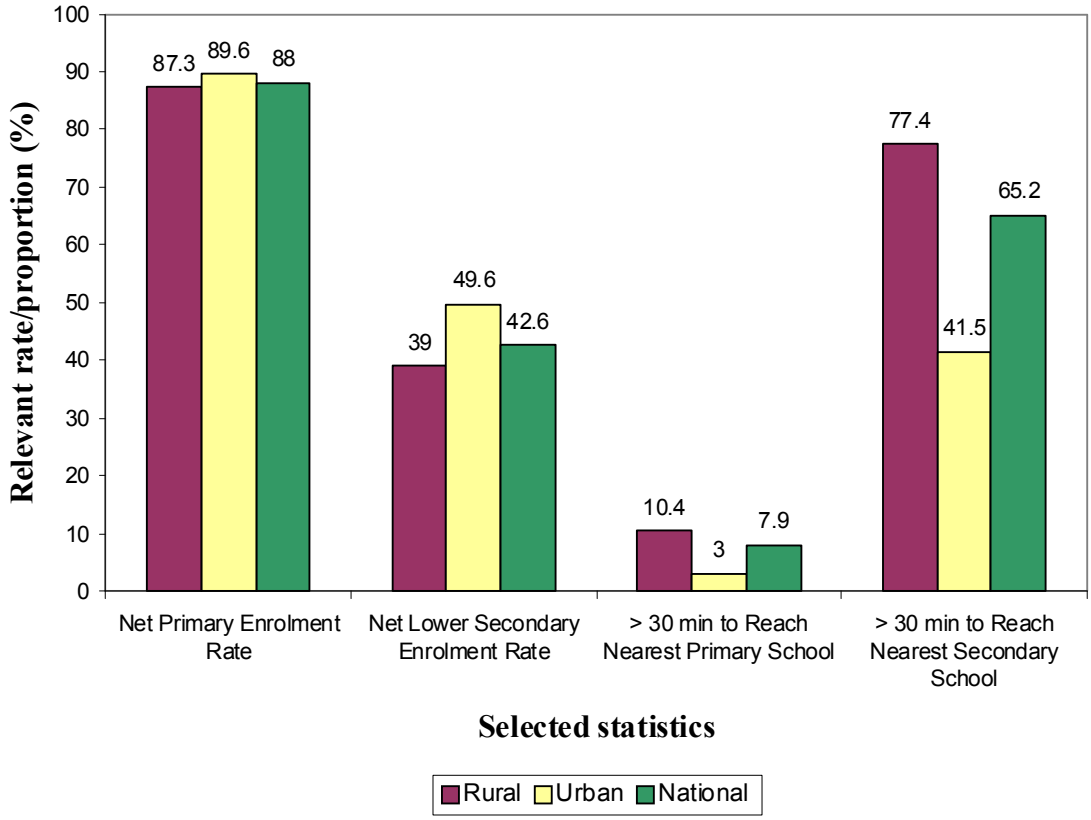
	Urban males	Rural males	Urban females	Rural females
No education	15.2	33.3	25.9	46.8
Some primary	25.5	31.4	22.5	27.8
Completed primary[29]	4.4	4.0	4.6	4.0
Some secondary	38.1	26.9	38.1	19.5
Completed secondary[30]	9.7	2.5	5.8	0.9
More than secondary	6.6	1.5	2.8	0.6
Don't know/missing	0.5	0.4	0.4	0.4
Total	100.0	100.0	100.0	100.0

Source: GSS, NMIMR, and ORC Macro (2004).

In an apparent contradiction of the above information, the 1997 Core Welfare Indicators Questionnaire (CWIQ) Survey data suggest there was little difference in net primary enrolment rates between rural (87.3 percent) and urban (89.6 percent) localities[31]. A plausible reason for this apparent contradiction is the possibility that many rural children do actually enrol in primary schooling, but drop out after a very short time, such as a few weeks. At the lower secondary level, a sizable rural-urban gap was registered in the net enrolment rate; the urban rate was 49.6 percent and the rural rate was 39 percent (see Figure 6). Rural-urban disparities are also evident in proximity to schools. Whereas three percent of urban primary school pupils require more than thirty minutes to reach the nearest school, the corresponding percentage for the rural sector is 10.4. For 41.5 percent of urban secondary school students, the nearest school is more than thirty minutes away, whilst the corresponding rural proportion is 77.4 percent.

[29] Completed grade 6 at the primary level.
[30] Completed grade 12 at the secondary level.
[31] Whilst significant differences exist in the estimated enrolment rates available from the 1997 CWIQ survey, GLSS4, and the 2000 population and housing census (Coulombe and McKay, 2003), the rates provided here are plausible.

Figure 6: Selected education statistics; 1997



Source: Based on data from GSS (1998).

This section has provided an overview of Ghana's rural-urban welfare patterns in the 1990s and early 2000s, with a view to emphasise the welfare disparities between rural and urban residents. Whilst Ghana's rural-urban welfare differences are not surprising – and are possibly lower than those in some African countries (Sahn and Stifel, 2003) – it is important to explore the forces underpinning these disparities, and to discuss the prospects for ameliorating them; the purpose of the next section.

3.3 Factors underpinning (and prospects for improving) Ghana's rural-urban welfare differences

Any attempt at determining the key factors underlying Ghana's rural-urban welfare differences must acknowledge the complexity of the potential factors, some of which are non-economic. In the discussion that follows, an attempt is made to garner insights into factors underlying the evolution of Ghana's rural-urban welfare disparities. Whilst the focus is on establishing plausible factors underlying the welfare gap, prospects for

improving rural-urban welfare patterns are also examined. To facilitate the discussion, the following propositions are proffered:

i) Ghana's rural-urban welfare gap is caused (at least partly) by the concentration – in urban areas – of business and industrial activities, and is sustained by the resultant inequalities in education, access to healthcare, and basic amenities;

ii) In the absence of a major policy shift to address this imbalance, there will be little change in the welfare gap.

3.3.1 Concentration of business and industrial activities in urban areas

One of the glaring features of economic life in Ghana is the concentration of business and industrial activities in urban centres, with this concentration being pronounced in cities like Accra, Kumasi, Tema, and Sekondi-Takoradi. Although economic factors underlie this concentration of business and industrial activities, other (such as geographic and political) factors are very important.

Accra's attraction as a commercial and industrial centre is linked to its being the country's capital. As the fulcrum of national political power, Accra is the ultimate preference with regard to the location of the headquarters of major business or industrial establishments. As a result, government ministries, major financial institutions, parastatals, and multinational corporations have their main offices in Accra (Republic of Ghana, 1999). Owing to the generation of agglomeration economies, this concentration of corporate and business activity tends to be reinforcing. Tema, on the other hand, is the location of Ghana's largest harbour; a factor that has played no mean a role in the setting up (in this city) of Ghana's oil refinery, the Volta Aluminium Company (VALCO), and other major industrial establishments. Also worth emphasising is the fact that the coastal location of Tema, coupled with its proximity to the capital, must have influenced its selection as the site for the harbour in the first place. Accra's capital status and Tema's industrial character have generated – in these two cities – a relatively well-developed infrastructure, with its attendant positive externalities. Accra-Tema has consequently become the industrial and commercial hub of Ghana. It is not surprising

therefore, that despite being the smallest Region (in terms of land area), Greater Accra is Ghana's second most populous Region.

Being the capital of Ghana's most populous Region (Ashanti), Kumasi's importance as a major trading centre is understandable. Other factors have enhanced Kumasi's appeal as a major commercial and industrial centre, notably its vast natural resources, its status as the seat of the prominent Asante kingdom and its central location that further makes it an essential economic link between northern Ghana and southern Ghana (especially Accra and Tema). Given the economic and political importance of Accra, Kumasi's role as a link between northern Ghana and Accra assumes increased significance. It is worth mentioning also that commercial activities in Kumasi have further been boosted by the city's tourist appeal.

Sekondi-Takoradi has also been one of Ghana's major cities for many years. It is the country's third largest city and the capital of the Western Region. Apart from being home to Ghana's oldest artificial harbour, this twin city lies on a railway network that links it to Accra and Kumasi. These features have enhanced the city's attraction as a major industrial and trading centre. With the construction of a bigger harbour in Tema in 1962, Sekondi-Takoradi seems to have gradually lost some of its glamour as an industrial hub. The city nevertheless continues to play a crucial role in Ghana's economy, since the Takoradi harbour is the main port for the country's exports (Huq 1989). The industrial and commercial appeal of Sekondi-Takoradi thus thrives on the cities' links to Ghana's export activities, which are quite significant.

It should be stressed that the factors underlying the relative concentration of business activities in other urban centres largely mirror – albeit to a much lesser extent – the account given about Accra-Tema, Kumasi, and Sekondi-Takoradi. In a nutshell, economic, geographical, and socio-political factors have combined to concentrate industrial, commercial, and governmental activities in urban centres, with this concentration more pronounced in cities. As a result, there has been a tendency over the years for urban centres in general, and cities in particular, to attract many residents, especially persons with relatively high levels of educational attainments and/or wealth. As discussed shortly, urban centres' monopoly over industrial and business activities has further contributed to the emergence of other rural-urban welfare inequalities.

3.3.2 Education-related inequalities

In Ghana, there is a tendency for urban residents to have higher levels of education than rural residents. This is partly due to the fact that relative to jobs located in rural areas, urban jobs typically require higher educational attainments. As a result, there is the tendency for rural school leavers and educated members of the rural labour force to migrate to urban centres. Writing in the 1960s, Omaboe (1966) drew attention to this phenomenon. He noted:

"In Ghana ... there is a growing drift of labour from the rural areas to the urban centres. Unfortunately, the drift has been largely of the educated sections of the rural population. These have not found agricultural employment attractive either economically or socially and they have swarmed to the few urban centres to seek employment in white-collar jobs" (Omaboe 1966, p.26).

It must be emphasised that the concentration in the urban centres of better-educated workers tends to result in other education-related inequalities between rural and urban localities. This is linked to the fact that better educated workers generally wield considerable economic, social, and political clout, compared to the less educated. As a result, urban residents tend to have an advantage in terms of the number, quality, and affordability of schools available. Moreover, the relative greater ability of urban residents to pay for better educational facilities contributes to the existence of these education-related disparities between rural and urban sectors.

In his "model" of educational inequality, Farrell (1999) identified four categories of educational equality; equality of access, equality of survival, equality of output, and equality of outcome. This classification scheme is adopted in the discussion of Ghana's rural-urban educational inequalities. The meanings of these concepts of equality (or inequality) – as used in the present study – are given below.

Inequality of access refers to rural-urban disparities in the likelihood of an individual entering (a given level of) the school system. Inequality of survival relates to rural-urban differences in the probability of staying in the school system to some specified

level, such as to the end of a complete cycle (e.g. primary or secondary). Output inequality refers to rural-urban differences in knowledge gained by the end of a given stage of the school system. Inequality of outcome has to do with rural-urban disparities in living standards, subsequent to the completion of the same level of schooling.

Ghana's educational system has five levels, namely, Pre-school, Primary school, Junior Secondary School (JSS), Senior Secondary School (SSS), and the Tertiary level. The Primary and JSS levels are jointly classified as Basic Education. Pre-school education is available mainly in urban localities, and as a result, rural children are typically excluded from it. At the primary level, data from the 1997 Core Welfare Indicators Questionnaire (CWIQ) Survey – shown earlier in Figure 6 – suggests there is very little inequality of access between rural and urban areas. However, as already noted, primary enrolment figures can be misleading owing to the possibility of many enrolled children dropping out after a few weeks, a possibility consistent with Table 14.

Inequality of access at the JSS level is however pronounced, with the rural enrolment rate lagging behind that of the urban by more than 10 percentage points (see Figure 6). Indeed, it is expected that rural-urban access inequality will widen for higher levels of the schooling cycle. It has also been observed that many children in Ghana do not acquire education beyond the basic level (Penrose, 1998). Given the disadvantages faced by rural school children (in relation to their urban counterparts) such as, the time taken to reach nearest schools, it is very probable that survival inequalities at the primary, JSS, and SSS levels are high.

Although accurate data on educational output inequalities are difficult to obtain, rural-urban literacy rates can provide a rough indication of the extent of these inequalities. Data provided by the 2003 Ghana Demographic and Health Survey suggest that rural educational output is markedly lower than that of the urban; this should, however, be treated with caution owing to the fact that rural-to-urban migration is likely to exaggerate this type of inequality. It is common knowledge though that the quality of education in rural localities is significantly below that of urban areas. Urban schools tend to have better qualified teachers, owing – at least in part – to the unwillingness or reluctance of qualified teachers to accept postings to rural localities, an assertion supported by anecdotal evidence. The reluctance to accept postings to rural localities is

due mainly to many (or all) of the rural-urban disparities highlighted in this chapter, such as inequalities relating to basic amenities, healthcare, and education. Other areas of rural-urban disparities in schooling quality include availability of relevant textbooks, adequate furniture and other logistics. At this point, it is fairly obvious that a vicious cycle is at work.

With regard to inequality in educational outcome, statistics are unavailable as far as can be ascertained. This is partly because numerous factors influence a person's living standard and information which link income or expenditure to the locality of a person's past education are difficult to obtain. Any assessment of this type of inequality will, at best, be speculative.

It is important to mention that demand-side factors also play a role in the above education-related inequalities. Anecdotal evidence suggests that the apparent low returns to primary schooling, coupled with the low incomes of many rural households, results in a situation where some rural household heads find the opportunity cost of formal education too high.

3.3.3 Disparities in access to healthcare and basic amenities

A key aspect of Ghana's rural-urban disparities lies in the area of access to healthcare and basic amenities. The information already provided (in section 3.3) about malnourishment, infant and under-five mortality, accessibility to potable water, and the usage of toilet facilities attest to the extent of rural-urban inequalities in access to healthcare and basic amenities. It must be noted that there are "quantity" and "quality" dimensions to these inequalities.

Many rural areas in Ghana lack adequate health personnel, such as doctors, nurses, and pharmacists. This is a perennial problem akin to the shortage of qualified teachers in rural localities. The irony of the problem is the cyclical nature. Health personnel are often unwilling to take up jobs in rural localities, a major reason ostensibly being the lack of basic amenities and good-quality schools (for their children). Many qualified

teachers are also unwilling to accept jobs in rural areas mainly because of the deprivations already highlighted.

There are fairly obvious interrelationships amongst the various aspects of rural-urban welfare disparity. For example, GSS and MI (1999) found a strong inverse relationship between mothers' education and infant and under-five mortality rates. They observe, *"children born to mothers with little or no education suffer the highest mortality"* (GSS and MI 1999, p.84). Furthermore, inadequate access to basic amenities, such as potable water and decent toilet facilities, leads to poor health, decreased productivity, and reduced educational outcomes.

3.3.4 Synthesis of factors underlying the rural-urban welfare gap

Living standards in Ghana are characterised by extensive rural-urban inequalities; welfare levels in rural localities are considerably lower than those of urban residents. It has been held that various self-perpetuating factors are key elements in this perennial welfare pattern. These include the concentration of business and industrial activities in urban centres and resultant disparities, such as, education-related inequalities, and gaps in access to healthcare and basic amenities.

A key element in the evolution of Ghana's rural-urban welfare gap is the concentration in urban centres of the educated and influential members of the population. This, in turn, is attributable to the nature of jobs in the urban sector and the urbanisation – at the national, regional, and district levels – of political power. Given the widely documented positive relationship between educational attainment and earnings or welfare (see, for example, Asenso-Okyere et al. 1997, and Coulombe and McKay 2003), the logical outcome of such a concentration of economic and political power in urban areas is the pervasive rural-urban disparities. Furthermore, inherent in the urban agglomeration of business and industrial activity (with its attendant increased population of the relatively well educated) are significant economies of scale and positive externalities that benefit various segments of the urban population.

The above discussion of factors underpinning Ghana's rural-urban welfare gap is not offered as an exhaustive explanation of the complex interplay of forces. Whilst other explanations might be relevant, the factors highlighted can hardly be ignored in any analysis of Ghana's rural-urban welfare differences. Indeed, the evolution of welfare in Ghana appears to reflect what Lipton (1977 and 1982) described as an *urban bias*:

> *"Small, interlocking urban elites – comprising mainly businessmen, politicians, bureaucrats, trade-union leaders and a supporting staff of professionals, academics and intellectuals – can in a modern state substantially control the distribution of resources" (Lipton 1982, p.66).*

3.3.5 Prospects for improving the rural-urban welfare gap

Given the widespread and perennial nature of Ghana's rural-urban welfare gap, it is appropriate to explore prospects for improving it. It should be noted that rural dwellers do make various attempts to bridge this gap, especially through migration and its associated remittance flows. However, there is scope for supplementing these individual efforts through policy formulation and implementation. It is worth emphasising though, that any attempt to deal with these rural-urban disparities must be within a broad framework of policies to improve welfare (especially poverty reduction) within each of rural and urban areas. This is because to a large extent, Ghana's rural and urban sectors are not dichotomous; they are a continuum. Moreover, there are diversities within each of these sectors, especially within the cities. For example, the standards of living in certain slums of Accra are likely to be considerably lower than welfare levels in certain rural localities. Apart from the fact that residents of major cities have been grappling with hazards of city life – such as overcrowding, traffic congestion, and crime – attention has been drawn to the increasing numbers of street children in Accra and other cities (see Beauchemin et al., 1999). It is critical to identify policies that would enhance opportunities for increased productivity and income generation in each of the two sectors.

One effective means of narrowing the rural-urban gap is by enhancing spatial linkages between rural and urban localities. This can be accomplished partly by improving transportation networks between rural and urban areas and by providing information

relating to job/market prospects in either sector. This would have the effect of reducing transportation costs, improving trade links, and promoting technology transfer between the sectors. It can also increase the labour pool and the market size for several goods and services. The proximity – in time and space – of rural localities to urban centres can, thus, be mutually beneficial to both rural and urban economies.

The importance of education and access to healthcare – in narrowing the rural-urban gap – can hardly be overemphasised. It is essential to improve upon the current provision of infrastructure and basic amenities in the rural areas as an objective in itself, and as a means of reducing the unwillingness of health personnel and qualified teachers to accept postings in these localities. It should be noted that major improvements in the provision of infrastructure and basic amenities have the potential of setting in motion a series of disparity-reducing effects. Specific policies to establish special incentives for health personnel and teachers who are willing to accept jobs in rural areas will be particularly useful. It is also important to acknowledge the role of demand-side issues in addressing the highlighted disparities. It will be helpful to inculcate into the general populace – especially rural residents – the importance of formal education. This can be accomplished through various avenues such as the news media, traditional rulers, churches and other religious groups, and market associations.

In a nutshell, even though improving the rural-urban welfare gap is feasible, it requires a concerted effort within a general policy framework of addressing welfare deprivations in each of rural and urban localities. Specific incentives to attract investment in rural areas – or in urban localities that are close to rural settlements – can have a highly beneficial impact on the rural-urban welfare gap. It is important to emphasise though that given Ghana's significant budget constraints, these suggestions call for enormous political will owing to their political economy implications and challenges.

3.4 Conclusion

Welfare patterns in Ghana are characterised by pervasive rural-urban disparities, with the welfare of rural residents lagging behind that of their urban counterparts. This rural-urban welfare gap is caused (at least partly) by the concentration – in urban areas – of business and industrial activities, and is sustained by the resultant inequalities in

education, access to healthcare, and basic amenities. These inequalities are self-perpetuating and firmly entrenched. Thus, without a major policy shift to address the disparities, there will be little change in the welfare gap.

In addressing the issues raised, some broad generalisations have been made about living standards in rural and urban areas. But as noted elsewhere in this study, there is considerable heterogeneity within each of Ghana's rural and urban areas. For example, welfare differences exist between Rural Coastal residents and their Rural Savannah counterparts. Furthermore, there are significant pockets of slums in major urban centres, such as Accra and Kumasi.

It has been observed that rural-urban welfare differences underpin various linkages between Ghana's rural and urban sectors. Two major forms of these linkages are migration and remittance flows. One definite route through which these interactions can bridge the rural-urban welfare disparities is the extent to which they impact the welfare of participants. The welfare impacts of migration and remittance flows between Ghana's rural and urban sectors are therefore worth exploring, and appropriately form the thrust of this study. As a prelude to the discussion of the data and methodological issues, a review of relevant literature on migration and remittances is carried out in the next chapter.

Appendix to Chapter Three

Figure 7: Rural-urban consumption welfare; 1991/92

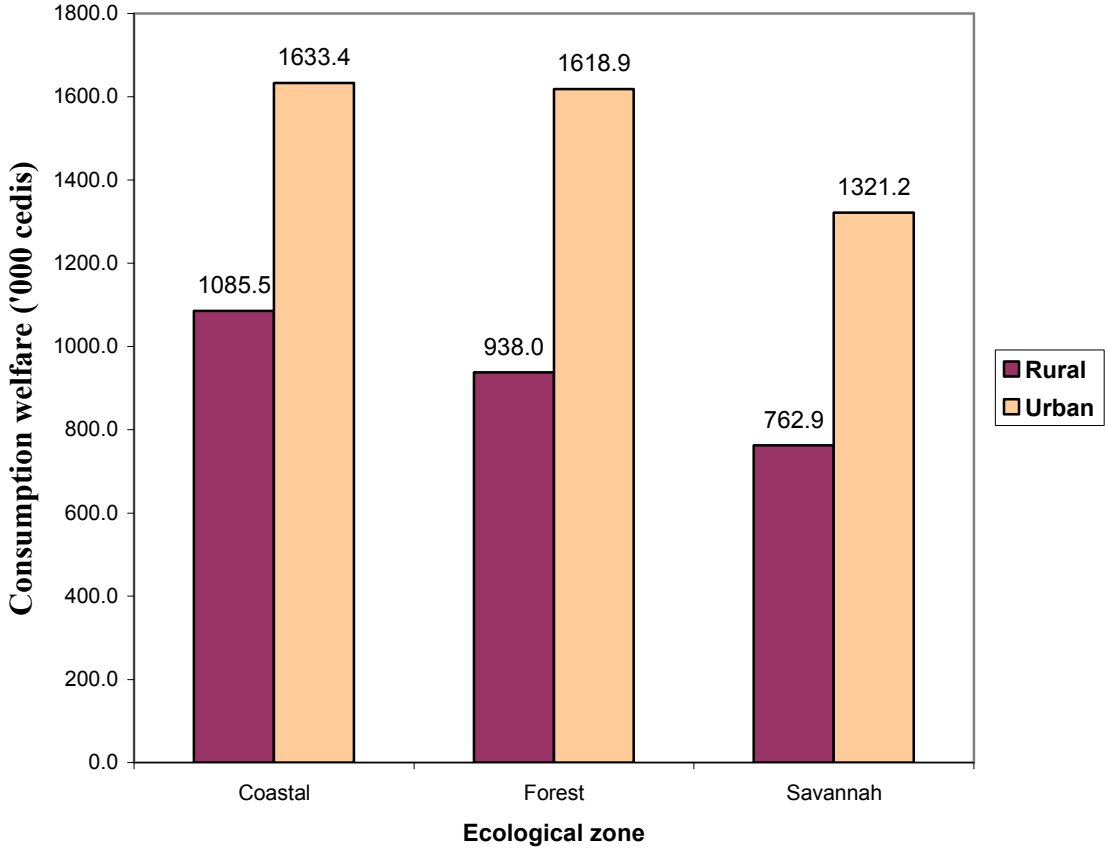


Figure 8: Rural-urban consumption welfare; 1998/99

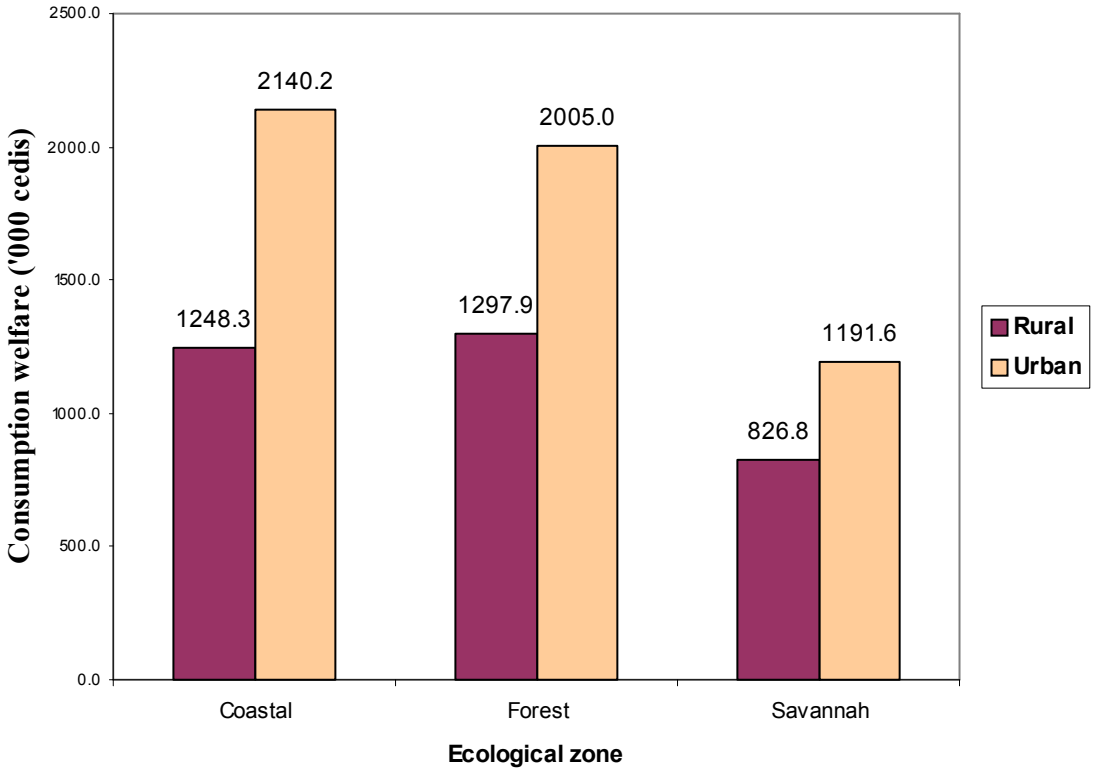
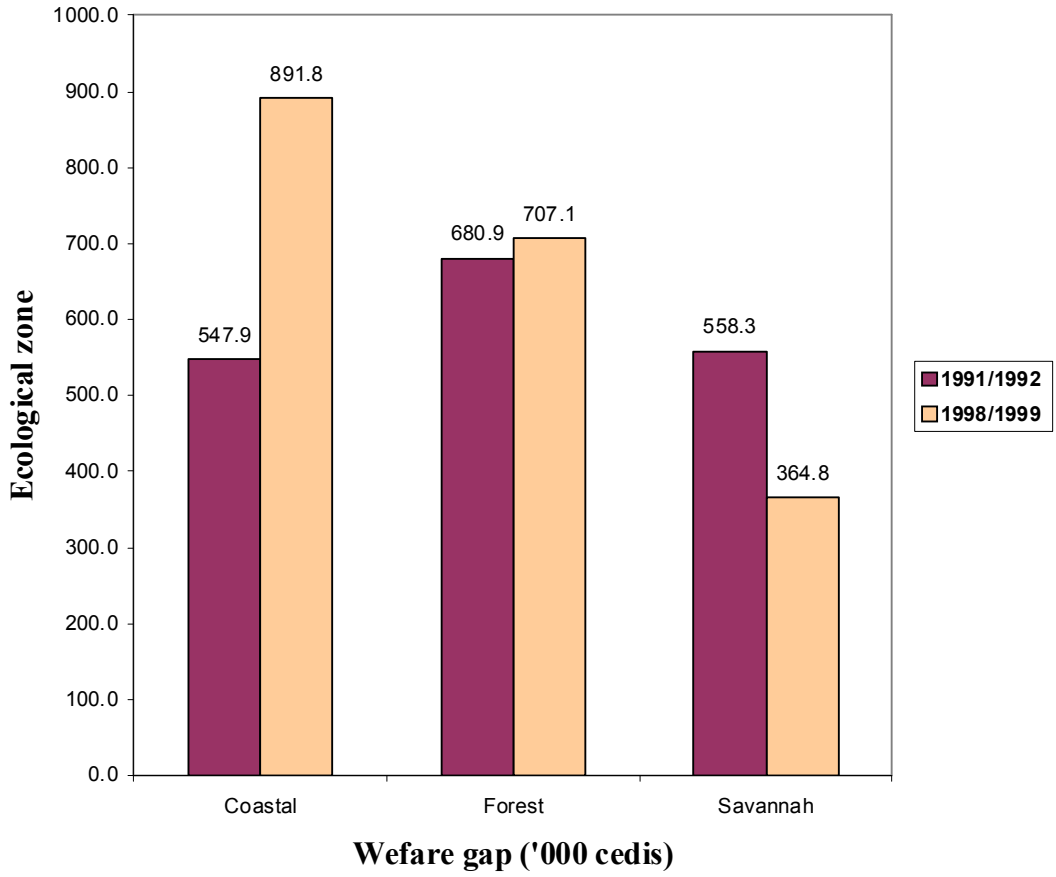


Figure 9: Urban-rural welfare gap in the 1990s (gap: urban mean welfare less rural mean welfare)



Chapter Four:
Migration and Remittances – A Review of Relevant Literature

4.1 Introduction

Migration and remittance flows are topics that have received considerable attention in the development literature for many years. Whilst each of these topics (especially migration) is sometimes studied independent of the other, many studies analyse remittances in the context of migration, presumably because of the widely-held notion that migrants are the main source of remittances. As noted in an earlier chapter, owing to the fact that migration and remittance flows are conceptually different phenomena, the present study analyses them separately, whilst identifying the strong links between the two.

Over the years, the relevance of migration, the rationale for migrating, and the policy response to migration patterns and magnitudes have dominated academic and policy discussions. Migration-related policies have also been influenced significantly by the migration literature. In the 1950s and 1960s, conventional thinking was favourably disposed to rural-to-urban migration, since it reflected the economic justification for a redistribution of resources, in response to economic incentives. This view was reflected by Lewis' (1954) model of economic development, a model that we revisit shortly.

The 1970s and 1980s, however, witnessed a shift in the theoretical and policy perspectives on migration. The escalating problems posed by urbanisation in developing countries, coupled with the dominant influence of the Todaro (1969) and Harris-Todaro (1970) hypotheses significantly cast serious doubts on the merits of rural-to-urban migration. Currently, there seems to be a growing acknowledgement that migration is, in many cases, a key escape route out of poverty for many households in developing countries (see de Haan 1999). Even though rural-to-urban migration has often dominated discussions on migration, there is evidence to suggest that for many

developing countries, it is not the most prevalent form of internal migration, and that rural-to-rural migration is more common (see de Haan, 1999; and Lucas, 1997).

The importance of remittances in developing countries has also featured prominently in academic and policy circles in recent years. Remittances often flow from migrants to relatives residing in migrants' country or place of origin. This is especially characteristic of remittances sent by international migrants. Whilst internal migrants (especially, rural-to-urban) have been known to send remittances to relatives in areas of origin, the flow of remittances from non-migrants to migrants is not uncommon, often taking the form of the transfer of goods, such as foodstuffs. In Ghana, for example, visits from urban residents to relatives in the rural sector (or visits from rural dwellers to urban residents) are usually occasions for remittance flows in both directions; the urban residents usually give out money and other items, such as, canned food and clothing, whilst the rural residents typically give out foodstuffs.

The sheer scale of remittance flows – in terms of their prevalence and the amounts involved – has attracted significant attention in recent times. There have been discussions relating to remittances' capacity for becoming an important source of external development finance, as well as their potential role in bridging the investment-saving gap in developing countries (see Ratha, 2005; and Buch, Kuckulenz, and Le Manchec, 2002). There have also been suggestions that remittances play a major role in enhancing the living standards of many households in developing countries (Adams and Page, 2005; and Bracking and Sachikonye, 2006).

The purpose of this chapter is to provide an overview of relevant literature relating to these two important topics of migration and remittances. The remainder of the chapter is divided into two parts; the first part reviews the migration literature, whist the second focuses on the remittances literature. The discussions in each of the two parts are further split into two sections, namely a review of the general (that is, non-Ghana) literature and a survey of those studies with a Ghana focus. Furthermore, discussions relating to theoretical issues are generally separated from those dealing with empirical modelling. Nevertheless, where theoretical issues are discussed, a limited discussion of some empirical results is carried out in those cases where the extent of linkage between an empirical study and the theory justifies their being jointly discussed. Owing to the

microeconomic perspective of the present study, coupled with the vastness of the literature on migration and remittances, microeconomic studies will dominate the literature review.

I. Review of relevant migration literature

4.2 General migration literature

4.2.1 Background

Ever since the seminal work of Ravenstein (1885), numerous studies have been carried out into various facets of this pervasive phenomenon. The diversity of disciplinary perspectives – e.g., demography, economics, and geography – of the studies attests to the intriguing and complex nature of migration. Many of the migration studies attempt to address issues relating to migration patterns [for example, Ravenstein (1885); and Lee (1966)], the rationale for migration (see, e.g., Sjaastad, 1962; Todaro, 1969; and Lucas and Stark, 1985), and the welfare impacts of these population movements (for example, Falaris, 1987; and Litchfield and Waddington, 2003).

The dominant influence of economic factors in migration decisions has been a standard theme in the migration literature (see Lucas, 1997; and de Haan, 1999). In discussions about the causes of migration, "push"-"pull" factors have been widely acknowledged. The "push-pull" concept can be gleaned from the writings of Lee (1966). The basic idea of the "push"-"pull" hypothesis is that certain adverse factors (inherent in areas of origin) tend to "push" people away, whilst other favourable factors (associated with areas of destination) tend to "pull" potential migrants from their areas of origin to the destination regions. Within the "push"-"pull" paradigm, the typical areas of origin and destination are rural and urban localities, respectively.

It is argued that rural dwellers are saddled with numerous "push" factors, such as unfavourable land-tenure arrangements, vagaries of the weather, high costs of agricultural inputs, and inadequate access to basic amenities, like potable water, toilet facilities, schools, and health centres. In short, widespread deprivation and poverty are

some of the major "push" elements. It should be noted that other "push" factors are non-economic, such as, conflict and war. Clearly, people facing the described adverse conditions have a high inclination to migrate. "Pull" factors, on the other hand, include higher wages, good drinking water, adequate toilet facilities, other basic amenities, and the glamour of urban life.

The issue of which of the two sets of factors – i.e., "push" and "pull" – is more relevant, is an empirical question. In practice, both sets of factors are often at play. In typical developing countries, such as Ghana, many people look out for opportunities to migrate in order to escape the deprivations of both rural and urban life. Whilst many rural dwellers explore opportunities to migrate to urban areas, urban residents often are eager to migrate to other countries, especially, Europe and North America. It is also not uncommon to find potential migrants planning to migrate in stages. For example, a rural dweller might initially migrate to a small town, settle there for a few years, and then migrate to a city. After living in the city for a few or several years, this individual might eventually migrate outside the country. In developing countries, there is usually the perception that one will be better off living in the city than in a rural area, and that living in Europe or North America is much better than making a living in the developing country. This perception is often strengthened through links or contacts with migrants; these links include visits, telephone conversations, and remittance flows.

It is quite evident that the "push" – "pull" explanation of migration is quite general. Beyond this level of generality, there is no shortage of theories that attempt to explain migration. The next sub-section highlights key migration theories, with the expectation that they will provide an appropriate backdrop for the discussions in other sections of this chapter.

4.2.2 Theories of the migration process and determinants

In the mid-1950s, Arthur Lewis propounded a model that sought to place rural-to-urban migration at the very core of the development process. Cast in a classical resource allocation framework, Lewis (1954) established arguments that predicted and endorsed

the migration of surplus labour[32] from the subsistence sector to an expanding capitalist sector. Whilst Lewis did not aim at propounding an explicit theory of migration, his model nevertheless, formed an important element of the paradigm that influenced economic and policy discourse on migration – especially, rural-to-urban – in the 1950s and 1960s.

In his two-sector model, Lewis (1954) argued that rural-to-urban migration is the logical and desirable outcome of a wage-gap between rural and urban sectors, and that there is the tendency for the process to continue until the wage-gap is eliminated. The main arguments of Lewis may be summarised as follows:

i) Many developing countries are characterised by a dual economy; a large subsistence sector and an expanding capitalist sector;
ii) Whilst the capitalist sector's marginal productivity of labour is positive, that of the subsistence sector is negligible, zero, or even negative, due to an unlimited supply of labour;
iii) The use of capital in the capitalist sector facilitates higher levels of labour productivity and wages than pertains in the subsistence sector;
iv) The gradual transfer of labour from the subsistence to the capitalist sector is a logical and desirable feature of the development process, since it provides the required human resource for industrial expansion; and
v) The process of labour transfer will stop when all surplus labour have been used up by the capitalist sector.

In Lewis' framework, the transfer of surplus labour from the subsistence sector to the modern or capitalist sector is a key impetus to capital accumulation and economic growth. Lewis argued that the subsistence sector's wage level served as a benchmark – specifically, a price floor – for wage setting in the capitalist sector. It was his view that in practice, the mark-up in subsistence wage needed to attract labour to the capitalist sector was in many cases, at least, 30 percent.

Even though Lewis' theory is highly acclaimed, it has come under some criticisms. A major critique of the theory relates to the validity of the assumption of surplus labour in

[32] That is, labour whose marginal productivity is non-positive; the employment status of such labour can be described as disguised unemployment.

the subsistence sector. For many developing countries, this assumption has limited validity. For example, with regard to farming, the assumption of surplus labour is likely to be untenable during the stages of ploughing, planting and harvesting. Another point of criticism has been the theory's assumption of a continuous demand (by the modern sector) for rural labour as long as the capitalist sector is expanding. As noted by Todaro and Smith (2003), this assumption is problematic since the modern sector's expansion may be associated with investment in labour-saving technology.

In a major contribution to the migration literature, Sjaastad (1962) explicitly treats migration as an activity that requires resources, generates costs, and yields returns. He conceptualises migration as an investment that increases labour productivity, and leads to an efficient allocation of resources. By treating migration as an investment, Sjaastad implies that individuals, after evaluating the present value of net income streams (associated with migrating to alternative locations), can make a rational choice based on the option with the highest rate of return. In other words, an individual will have an incentive to migrate if migration will increase the present value of his/her lifetime net income.

Apart from the intuitive appeal of Sjaastad's framework, the approach persuasively addresses the issue of selectivity of migrants. For example, it explains why young persons tend to have a higher representation (relative to the aged) amongst migrants; the young, on average, would have a longer time horizon (compared to that of older persons) over which the returns to migration can be reaped. Lucas (1997) has observed, however, that to the extent that young persons have a higher discount rate than that of older persons, this often made assertion may not be valid.

Perhaps, the most well-known migration model is the hypothesis formulated by Todaro (1969), and subsequently, extended by Harris and Todaro (1970). Key assumptions underlying the model include the following:

i) The highest wage levels in the economy are in the urban formal sector, and as a result, the preferred jobs of rural dwellers are urban formal employment;

ii) Due to the difficulty in obtaining urban formal jobs, the search for such jobs is best carried out from a state of urban unemployment or urban informal employment;

iii) The probability of obtaining an urban formal sector job is inversely related to the rate of urban unemployment.

According to Todaro, rural-to-urban migration is determined by rural-urban "expected" – rather than actual – real wage differentials. In other words, rural-to-urban migration depends on a combination of rural-urban actual real wage differentials and the probability of obtaining an urban job. Todaro's hypothesis essentially underscores the view that rational economic considerations are key to migration decisions. The model postulates that prospective migrants weigh the costs and benefits (over their entire planning horizon) of potential migration decisions, taking into account the risks of unemployment in the urban centre. Thus, as rightly pointed out by Lucas (1997), the Todaro model represents a reformulation of Sjaastad's (1962) model.

The Todaro model offers a plausible explanation for the simultaneous existence of urban unemployment and rising rural-to-urban migration. As noted by Todaro (1969, p.147),

> *"... as long as the urban-rural income differential continues to rise sufficiently fast to offset any sustained increase in the rate of job creation, then even in spite of the long-run stabilizing effect of a lower probability of successfully finding modern sector employment, the lure of relatively higher permanent incomes will continue to attract a steady stream of rural migrants into the ever more congested urban slums"*.

In extending the Todaro model, Harris and Todaro (1970) utilised a two-sector internal trade model with unemployment, to obtain an equilibrium characterised by urban unemployment. In addition to assuming that prospective rural migrants are expected utility maximisers, Harris and Todaro assume the existence of a periodic random job selection process, whenever the number of job seekers exceeds the number of available jobs. The thrust of the Harris-Todaro hypothesis is that the existence of an institutionally determined urban minimum wage in many developing countries can – and often does – result in an equilibrium with considerable urban unemployment.

The basic Todaro (and Harris) model has been the subject of various criticisms and extensions[33]. These criticisms and modifications question the assumptions or empirical validity of the model and/or introduce more realistic assumptions. For example, in his modification of the Harris-Todaro model, Fields (1975) proposes four extensions to the model, by incorporating a more general job-search behaviour, an urban traditional sector, preferential hiring by level of education, and labour turnover considerations. These modifications result in a considerably smaller and more realistic predicted rate of unemployment. In spite of the various extensions to, and criticisms of, the basic Todaro model, it continues to be a key reference in the theoretical, empirical, and policy discourse on migration.

The economics literature has traditionally treated migration as an individual decision motivated by mainly economic considerations. This notion is reflected in the literature reviewed so far in this section. Over the past two decades, this view – that the migration decision is taken by the individual – has been consistently challenged. Indeed, in typical developing countries, it is common for the adult members of a household to collectively decide that one of its members should migrate. It is thus understandable that there is, currently, an emerging paradigm that recognises the dominant role of the family or household in migration decisions. Major proponents of this school of thought include Oded Stark and Robert Lucas. This modified view treats migration as the outcome of a collective (rather than an individual) strategic decision made by the family or household. It is argued, that in many cases, migration is employed as a livelihood mechanism for diversifying income and to insure the entire household (including the migrants) against risks and uncertainty. Since this view of migration often places remittance flows within the context of a migration-remittance strategy, we will revisit the issue later in this chapter.

Given the widespread risks associated with agricultural activities, the mitigation of covariant risks poses a challenge to many rural households. In principle, these risks can be reduced through contractual arrangements with households located in different communities. In practice however, whilst longer distances between households reduce covariant risks, contract compliance costs and the likelihood of a moral hazard tend to

[33] For a discussion of some of these criticisms and extensions, see Todaro (1980) and Lucas (1997).

increase with the distance between households. One way by which households can mitigate this dilemma is to "send" one of their members to reside in a different community, thereby using the bond of kinship to reduce both the compliance cost and the moral hazard problem (Rosenzweig and Stark, 1989).

In an application of a risk-theoretic framework, Rosenzweig and Stark (1989) have examined households' use of a combination of marriage and migration to reduce consumption fluctuations. Stark and Rosenzweig hypothesised that the spatial distribution and features of marital arrangements involving daughters are partly the outcome of tacit inter-household contractual arrangements aimed at consumption smoothing. Using longitudinal data from villages in South India, Rosenzweig and Stark find evidence in support of their hypothesis; the combination of marriage and migration contributes to a decrease in consumption variability, and households that are susceptible to higher income risks are more likely to engage in longer distance marriage cum migration arrangements.

Schrieder and Knerr (2000) have also examined the potential of migration with remittance strategies in smoothing the incomes of rural households. In an application of probit and Tobit models to 1991/92 survey data from Cameroon, Schrieder and Knerr observe the failure of migration with remittance strategies in serving as a social security mechanism when the potential remitter does not expect any considerable inheritance. They note, however, that migration-cum-remittance strategies seem to help small-scale farmers in times of crises.

4.2.3 Empirical modelling of migration determinants and impact

The migration literature abounds with numerous empirical investigations into the determinants of migration. The empirical literature also tackles issues relating to the impact of migration on aspects of development, such as income levels and income distribution. A useful way of classifying empirical migration modelling is in terms of the level of aggregation of the data used. Thus, migration equations can be categorised broadly into two, depending on whether macro- or micro-level data are employed. In what follows, key features of the empirical modelling of migration determinants and

impact are surveyed. It is worth noting that owing to the focus of the present study, the empirical micro-migration literature dominates the discussion in this sub-section.

4.2.3(a) Empirical modelling of migration determinants

Many early studies of migration determinants employed aggregate or macro-level data. As suggested by DaVanzo (1981), these studies typically treated migration as an equilibrating mechanism that acted to narrow spatial income differentials. In her acclaimed review of (mainly) macro-migration studies, Yap (1977) notes that econometric estimates confirm the importance of economic factors in migration decisions. Specifically, the studies generally find a positive effect for (destination-origin) income differential (i.e., when this gap is explicitly included), and a negative effect for distance. Where wages or per capita incomes of origin and destination localities are included separately, the destination and origin wages usually exert positive and negative effects, respectively, on migration. Other economic considerations affecting migration decisions include chances of obtaining employment, better educational opportunities, and the availability of social amenities (Yap 1977).

Over the past few decades, there has been an increase in the number of migration studies that employ micro-level data. This increase may be attributed to two key factors; the increase in the number of household surveys, especially, in developing countries, and – as noted by Ghatak, Levine, and Price (1996) – McFadden's (1974) pioneering work on the estimation of discrete choice models. An advantage with using micro-level migration data is the increased scope for more detailed analyses of the relationships between migration decisions and household or individual attributes. Micro migration data also typically provide more observations on relevant variables, thus boosting the capacity for the generation of more reliable results.

The following is a stylised representation of micro migration equations (see Lucas, 1997):

$$M^a = \mu(W^a, C^a, A^a, \varepsilon^a)$$

where:

M^a : a dummy for individual ***a***'s migrant status;

W^a : a vector of discounted wage streams available to ***a*** in alternative locations;

C^a : a vector of discounted costs associated with migrating to alternative locations;

A^a : a vector of ***a***'s personal attributes; and

ε^a : a stochastic term reflecting ***a***'s idiosyncratic tastes.

A major difficulty with the estimation of such migration models is with the measurement of expected earnings at the alternative locations. The data used in these studies are often cross-sectional survey data, and as a result, the observed wage or income of a person pertains to only one location. Thus, the problem of the counterfactual remains an enormous challenge. A number of studies attempt to circumvent this problem by estimating an earnings equation for alternative locations, and using these equations to predict a person's unobserved income at that location (see, for example, Lucas 1985). Although this represents a significant step in addressing the problem of the counterfactual, other potential problems may still remain (Lucas, 1997). For example, since the income equation corresponding to an alternative location is estimated using a sample of individuals living in that location, a sample selection bias may arise. This is because the individuals whose incomes formed the basis of the estimated equation may possess some unobservable characteristic(s), and as a result, may be inherently different from those whose (expected) incomes are to be predicted.

In response to estimation problems associated with micro migration equations, various studies have pursued, with varying levels of sophistication, modelling refinements of the stylised micro migration equation. These refinements include the incorporation of an employment equation, and a correction for selectivity bias (for examples, see Lucas, 1985; and Vijverberg, 1993). The refinements notwithstanding, Lucas (1997) observes, that the main messages from the results have not changed our understanding, even in comparison with macro estimates. He adds:

> *"Whether further effort in refining our estimation techniques will pay off in terms of removing biases and increasing precision is obviously unknown. A systematic comparison of the improvements to date, from any given data set,*

may be worthwhile. On the other hand, perhaps the balance of effort should shift toward formulating and testing newer hypotheses" (Lucas 1997, pp. 741-742).

4.2.3(b) Empirical modelling of the impact of migration on migrants' incomes

A major challenge in the estimation of migrants' income gains is the determination of what they would have earned if they had not migrated. Even though several methods for estimating migrants' income gains have been identified in the literature (see Lucas 1997), two approaches seem to dominate. These methods are the application of migration dummies in earnings (or income) functions, and the estimation of separate income equations for migrants and non-migrants.

The application of migration dummies (in income functions) has been employed by Yap (1976) in a study of rural-to-urban migration and urban underemployment in Brazil. Using census data, Yap estimated income functions to compare the incomes of migrants with those of non-migrants residing in migrants' areas of origin; this was done for three rural areas (origins of migration) corresponding to the three major regions in Brazil. For each rural area, the income gain to migrants (from that area) was estimated by pooling observations on rural non-migrants, rural-to-rural migrants, and rural-to-urban migrants. The regressors for Yap's income functions included education level, age group, sex, race, and migration status, with each regressor represented by a set of dummy variables. In particular, there were four dummy variables for migration status, namely, rural non-migrant (omitted), rural-to-rural migrant, recent rural-to-urban migrant, and less recent rural-to-urban migrant.

Yap's (1976) results suggest that rural-to-urban migrants derived significant income benefits from migration, and that no significant income gains accrued to rural-to-rural migrants. In spite of the fact that Yap's approach is insightful, it does not capture convincingly the incomes migrants would have earned if they had not migrated. As Lucas (1997) points out, there are concerns about Yap's assumption that the returns to education and other estimated coefficients are identical in both origin and destination localities. Lucas further observes that Yap's approach is potentially problematic because of the possible correlation of the migration dummies with unobserved attributes distinguishing migrants from non-migrants.

The issue of the counterfactual – as it relates to migrants' incomes – has often been addressed by estimating separate income equations for migrants and non-migrants (see, for example, Nakosteen and Zimmer, 1980; Pessino, 1991; and Tunali, 2000). Such methods typically incorporate an adjustment for selectivity bias by employing techniques such as Lee's (1978) two-step method, an approach that is commonly known as Heckman's (1979) two-step procedure. For the sake of illustration, let "on" and "off" describe the different sets of observations corresponding to individuals who take a particular decision (such as, the decision to migrate), and those who do not, respectively. Then, in brief, the Heckman two-step method entails deriving selectivity variables from a probit (decision) regression, and inserting these variables into income OLS regressions for the "on" and "off" samples. This approach yields consistent estimates for the truncated – that is, the "on" and "off" – income regressions (see Lee, 1978; and Heckman, 1979). It is worth noting, however, that this popular two-step method assumes that the error terms in the probit and OLS regressions are normally distributed; a violation of this assumption might result in failure to detect selectivity in the OLS regressions (see Lee, 1982).

Using data from Peru, Pessino (1991) applied Heckman's two-step procedure to estimate wage equations for movers and stayers in three regions; Lima, other urban, and rural localities. The regressors used in the study captured attributes, such as, work experience, education, and marital status. Even though Pessino did not find evidence in support of selectivity amongst movers in any of her samples, she found positive selectivity amongst stayers in Lima, and negative selectivity amongst stayers in rural areas. In other words, Pessino's evidence suggests that Lima stayers earned more than movers would have earned if they had stayed, but – contrary to expectations – rural stayers earned less at their location than movers would have earned if they had stayed.

In a more recent study, Agesa (2001) contributes to the discourse on rural-urban migration by applying the Heckman two-step technique to Kenyan rural and urban data. Agesa's approach is, essentially, identical to that of Nakosteen and Zimmer (1980); after using the two-step method to estimate migrant and non-migrant income equations, these equations are then used to generate an urban-rural income gap variable for inclusion in a migration structural equation. Regressors for the migration (decision) and

income equations include indicators (or proxies) for personal attributes and human capital. In addition to obtaining a positive and statistically significant coefficient for the urban-rural income gap variable, Agesa's findings suggest that those rural workers more likely to gain from migrating to the urban sector are those who migrate. Other studies that have analysed the migration-income link using corrections for selectivity bias include Falaris (1987; for Venezuela), Lanzona (1998; for rural Philippines), and Tunali (2000; for Turkey).

4.3 The Ghana migration literature

4.3.1 Introduction

Even though migration is very common in Ghana, it has attracted a modest number of economic analytical studies. This dearth of economic migration studies is apparently due to the fact, that over the years, there has been a general lack of detailed migration data. Some notable attempts have, nevertheless, been made to capture the main patterns and rationale for migration in Ghana.

Whilst most of these studies are descriptive, they often present cross-tabulated survey statistics and other information that offer valuable insights into the reasons, extent and patterns of migration (see, for example, Caldwell, 1968 and 1969; Tutu, 1995; and Gbortsu, 1995). Thus, for instance, according to the literature, the reasons (given by migrants or their representatives) for migrating include job search, schooling, marriage, and other family-related considerations (Caldwell, 1969; Tutu, 1995; and GSS, 2000). Other studies (such as Beals, Levy, and Moses, 1967; Knight, 1972; and Litchfield and Waddington, 2003) have employed multivariate analyses – using census or survey data – to investigate issues relating to migration determinants and the welfare impact of migratory movements.

This section aims to present a broad overview of studies on Ghana's migration. The review will cover three main areas namely, migration patterns, the determinants of migration, and the impact of migration. Apart from highlighting key results of the Ghana migration literature, the discussion will bring to the fore some limitations and knowledge gaps.

4.3.2 Patterns of migration in Ghana

Migration in Ghana in the early twentieth century was mainly in the form of rural-to-rural movements, as people migrated to work on cocoa farms and gold mines on a seasonal or semi-permanent basis (see Brydon, 1992; and Knight, 1972). Whereas permanent migration has assumed increased importance over the past four decades, data constraints have considerably limited the available information on the magnitudes and patterns of temporary and seasonal migration. According to GSS (2000), 52 percent of Ghana's adult population are migrants, with the corresponding percentages for men and women being roughly the same (51.4 and 52.2, respectively). In view of the fact that these figures do not include temporary and seasonal migration, population mobility in Ghana is quite high.

Regarding the occurrence of temporary and seasonal migration in Ghana, these are mainly associated with agricultural activity. More than three decades ago, Beals and Menezes (1970) observed that temporary migration is the principal form of labour mobility in Ghana. Whilst the increase in manufacturing and other non-farm activities may have contributed to an increase in permanent migration, there is no reason to doubt the importance of temporary migration, even if it is not the most dominant form of migration in Ghana presently. A significant component of temporary migration is seasonal migration, which often results from the different farming calendars between northern and southern Ghana. This is echoed by Elliot Berg in his discussion of West African migrant labour:

> *"... climatic zones in West Africa are so ordered that the slack season in the [savannah] zones is the busy season along the southern coast. Thus there is a seasonal dovetailing; the period of inactivity in the [savannah] regions corresponds to the time of peak agricultural demands in the cocoa and coffee regions of the forest zone. Short-term movement from [savannah] to forest was thus a natural adaptation, particularly because the kinds of work required in the cocoa and coffee regions, harvest [labour] and the clearing of new plantations, lent themselves to seasonal or casual performance" Berg (1965, p. 164).*

According to Tutu (1995), the major forms of migration (on the basis of the 1991 Migration Research Study) are rural-rural, rural-urban, and urban-rural, in that order. Tutu also identifies the dominant Regions of destination as the Greater Accra, Ashanti, and Western Regions; of the ten Regions, the Upper East was the least attractive destination. Using data from the fourth wave of the Ghana Living Standards Survey (GLSS), however, GSS (2000a) computed the percentage shares of migration flows for 1998/99 as follows: urban-rural (35%), rural-rural (32%), urban-urban (23%), and rural-urban (10%). Batse (1995) provides additional insight into the relative importance of different migratory forms. On the basis of data from the 1960, 1970, and 1984 Population Censuses of Ghana, Batse has compiled a table (see Table 15 below) of the relative importance of different forms of internal migration. Table 15 and the GSS (2000a) figures above suggest that although rural-rural migration is still widespread, its importance, relative to that of the other forms of internal migration, has reduced since the 1970s. On the contrary, urban-to-rural migration appears to be more prevalent than is often assumed. It has been suggested that the shift in migration patterns between 1970 and 1984 was at least partly due to a fall in rural-rural migration, which resulted from a decline in farming and mining activities in the rural areas in the 1970s and early 1980s (Batse, 1995).

Table 15: Relative importance of different types of migratory movements within Ghana; 1960, 1970, and 1984

Type of Migratory Movement	1960	1970	1984
Rural-rural	59.8	51.7	24.2
Rural-urban	17.6	16.6	16.2
Urban-urban	11.1	15.0	34.2
Urban-rural	11.5	16.7	25.4
Total	100.0	100.0	100.0

Source: Batse (1995)

From the evidence surveyed so far, it appears that rural-to-urban migration is not the most prevalent form of migration in Ghana. As noted elsewhere (de Haan, 1999; and Lucas, 1997), rural-to-rural migration is the most common type of migration in developing countries, and the literature on Ghana supports this assertion, at least, for 1960 and 1970.

4.3.3 Determinants of migration in Ghana

The Ghana migration literature's evidence on migration determinants may be grouped into community/household characteristics and individual attributes. As is common in the general migration literature, many of the studies on Ghana's migration focus on rural-to-urban migration[34]. As a result, the migration determinants identified are often mainly applicable to migration from rural to urban localities. The major community and household characteristics mentioned in the literature include distance from potential destination, the economic condition of the destination locality, the welfare status of the sending household or community, and the presence of kinship or friends in the destination locality.

One of the key results of the study by Beals et al. (1967) is the negative impact of distance on migration rates. Using data from the 1960 population census, Beals found statistically significant evidence in support of distance as a strong deterrent to interregional migration in Ghana. In a study of rural-to-urban migration using survey data[35], Caldwell (1968) also found evidence in support of the negative effect of distance on migration. According to Caldwell, for all persons aged more than 20 years, there was a clear inverse association between the propensity to migrate to the towns and the distance from the nearest large locality. It is worth noting that Caldwell found this result to be statistically significant for both men and women. As suggested by Beals et al. (1967), the negative effect of distance might be linked to information costs, as well as important cultural and social differences between localities.

Empirical analyses of Ghana's migration experience lend credence to the common view that economic considerations are crucial to migration decisions. Beals et al. (1967) observed a tendency for migrants to move to regions with high wages, and noted that high wage levels in the destination region contributed highly to the propensity to migrate. Data from the 1991 Ghana Migration Survey[36] suggest that job-related reasons

[34] It is not very clear why this is the case. Perhaps migration-induced city congestion and related problems tend to make rural-to-urban migration more prominent, thereby attracting public and research focus.
[35] The survey – conducted between 1962 and1964 – had a sample of 1,782 rural households and 585 urban households (Caldwell, 1968).
[36] The Survey was part of a joint Project of the Ghana Statistical Service and the Social Sector Policy Unit of the Ministry of Finance and Economic Planning. The United Nations Population Fund (UNFPA) sponsored the Project.

play a major role in migration decisions (see Tutu, 1995). Thus, on the whole, the evidence suggests that favourable economic conditions in potential destination localities act as a key determinant of the propensity to migrate in Ghana.

The Ghana migration studies suggest that the welfare level in the sending community (or household) exerts an effect on migration. Beals et al. (1967) found a negative effect (of origin locality's income) on migration. Notably, when urbanisation was included in the migration equation, this effect (of origin locality's income) was stronger than that of the destination locality's income level. Caldwell (1968), on the other hand, found evidence associating better-off rural households with a higher propensity to migrate to the towns. Whilst the results of Beals et al. (1967) and Caldwell (1968) appear to conflict, it might well be the case, that they are actually capturing different effects on migration. The result of Beals et al. is a reflection of the tendency for people to want to stay in an area if favourable economic conditions prevail. On the other hand, Caldwell's result shows, that for any community characterised by unfavourable conditions, members of richer households are generally better able to embark on migration. It is worth noting also, that apart from the fact that the two studies used different datasets, Caldwell was only reporting an association, whereas Beals et al. carried out a regression analysis. These results nevertheless highlight the complex nature of migration determinants and outcomes.

The importance of networks in migration decisions has been generally acknowledged (Lucas 1997), and for Ghana, this factor appears to be crucial in most migration decisions (Caldwell, 1968; and Tutu, 1995). This is because the establishment of networks often results in the reduction of migration costs. On the basis of data from the Ghana 1991 Migration Survey, Tutu reports that for persons intending to migrate, 76 percent had friends or relatives residing in the destination locality. In the context of rural-to-urban migration, Caldwell (1968) also found a very strong statistically significant association between the presence of rural household members in the destination locality and the likelihood of other members visiting[37] (or migrating to) the town. As rightly observed by Tutu (1995), the role (in migration decisions) of access to destination-based kinship and other networks is closely linked to the cost-reducing

[37] Caldwell (1968) observed that the act of visiting was increasingly a prelude to migration.

effect of such access. A dynamic element has further been associated with the role of destination-based networks of relatives and friends. In his study of rural-to-urban migration in Ghana, Caldwell (1969) observes that by increasing the population of rural residents' relatives and friends in urban centres, rural-to-urban migration can be self-reinforcing.

Whilst the propensity for migration is higher amongst males than amongst females, especially over longer distances (Caldwell 1968), migrants in Ghana are dominated by young persons (see Caldwell, 1968; and Tutu, 1995), as predicted by the human capital theory. The Ghana migration studies' evidence relating to the effects – on the tendency to migrate – of marital status and the number of dependents are, however, somewhat tentative. Tutu (1995) observes that the unmarried are more likely to migrate, but Caldwell's (1968) evidence for this was not very strong. Again, in respect of the number of dependents, Tutu (1995) reports a negative effect on migratory movements, whilst Caldwell (1968) was very cautious on this. Caldwell however, found a positive relationship between number of siblings and rural-to-urban migration. In the context of rural-to-urban migration, Caldwell further suggests there is often strong pressure on persons of low birth rank (that is, older siblings) to stay at home, and – in the case of persons who have migrated – to return home. According to Caldwell, this tendency is due to the fact that the most senior siblings are often required by social norms to shoulder certain responsibilities, such as, looking after aged or ailing parents, and managing the family farm.

With regard to the impact of education on the propensity to migrate, the Ghana studies are not unanimous on the direction of influence. In their econometric investigation of interregional migration in Ghana, Beals et al. (1967) found a negative effect of education on migration. This result was contrary to what had been hypothesised, and the authors acknowledged that they *"simply do not know what underlies the observed inconsistency"* (Beals et al. 1967, p.485). Caldwell (1968) on the other hand, found a statistically significant positive association between education and the propensity for rural-to-urban migration. According to the 1991 Migration Research Study, however, a higher percentage of migrants have no formal education, compared to non-migrants (Gbortsu, 1995). Data reported by Gbortsu further suggest, that it is only with respect to university education, that the proportion of migrants with education exceeds that of non-

migrants. Clearly, the education-migration interplay appears to be complex. This complexity may be attributed to the potential for considerable correlation between any pair of education, incomes, and migration.

The incorporation of a correction for selectivity bias is a key aspect of a recent econometric migration study by Tsegai (2005). Using data collected under a Common Sampling Frame (CSF) approach, the study examines the determinants of the decision to migrate within the Volta Basin of Ghana. In investigating the determinants of the migration decision, Tsegai places particular prominence on the role of migration income in influencing the decision. In view of the fact that migrants may be non-randomly selected from the population, the study employs Heckman's two-step procedure for selectivity correction. A major result of the study is the evidence found for expected income gains in influencing migration decisions. Other factors found to influence the migration decision include previous migration experience of the household head and/or spouse, household size, education, social capital, ethnic networks, having irrigated fields and off-farm activities. Since the study's geographical focus was very localised, its findings cannot be generalised for the entire country. Notwithstanding this limitation, the study's results and – more importantly – the methodology constitute a valuable addition to the Ghana migration literature.

The literature reviewed in this sub-section suggests that studies on Ghana's migration determinants are dominated by the use of descriptive statistics. Whilst the usefulness of such methods can hardly be ignored, it is appropriate to emphasise that an increased use of alternative and more rigorous approaches – to the analysis of migration data – can be insightful and complementary.

4.3.4 Impact of migration on welfare in Ghana

Even though the subject of migration's impact has received considerable attention in general public discourse, relatively few studies have addressed it in a systematic fashion. Whilst this paucity of studies may be attributed partly to the lack of suitable data for such an exercise, one can hardly lose sight of the challenge posed by the complex interplay of factors characteristic of migratory movements and their effects.

The above problems notwithstanding, useful information can be obtained – from survey data – on the impact of migration. Some of the information relate to the perception of both migrants and non-migrants about the impact of migration.

Tutu's (1995) examination of the 1991 Migration Survey data provides useful insights into the perceptions of family members left behind with regard to the impact of migration. According to the study, there was a perception that the migration-induced loss of rural labour was compensated for by the extra effort put into productive activities by the remaining workforce. It is not surprising therefore that most (52 percent) households claimed short-run output had been unaffected and they anticipate the same situation in the long-run. Furthermore, 66 percent of remaining family members did not reckon there had been a disruption of family life as a result of the migration of their members.

Tutu (1995) further provides information on the perception of return migrants about the impact of their migration on their households. Return migrants generally reckoned that migration had enhanced their household welfare. According to the findings, a quarter of return migrants indicated that the output of household business would be boosted by their return, whilst 22 percent and 18 percent believed that family income would rise, and their return would decrease family dependence on hired labour, respectively.

In exploring interrelationships between migration and development, Asante (1995) has highlighted the important role played by migrants in the initiation and funding of development projects in their (rural) localities of origin. He notes that many of these projects are funded jointly by migrants and non-migrants; migrants normally make larger financially contributions per head, and non-migrants often provide considerable labour input. To quote Asante (1995, p. 219),

> *"There is a lot of undocumented evidence in Ghana of second cycle schools, health clinics, electricity, pipe-borne water supply, markets and feeder roads construction in rural communities which have been provided through such combined efforts."*

Asante (1995) – also using data from the 1991 Migration Survey – highlights the important role of migration through urban-to-rural remittance flows. He cites this as one of the avenues through which migration enhances the welfare of sending households

and communities. Asante also suggests that urban-to-rural remittances sent by rural-to-urban migrants perform a key welfare redistribution function by narrowing the welfare gap between rural and urban sectors.

In discussing migration's impact on destination communities, Asante (1995) draws attention to the lack of clear evidence on the subject. He notes that whilst rural-to-urban migration might contribute to urban unemployment, data from the 1970 and 1984 population census fail to provide clear support for this. Asante further suggests that many rural-to-urban migrants are unable to gain employment in the formal sector, and consequently, the informal sector becomes a haven for the majority of these migrants.

Very few econometric analyses of the impact of migration are available. The few existing studies, nevertheless, lend some support to the view that migration enhances migrants' welfare. Using data from two waves of the Ghana Living Standards Survey (GLSS), Litchfield and Waddington (2003) employ multivariate analyses to investigate the impact of migration on three welfare indicators, namely, household consumption expenditure, poverty status, and primary school attendance. The study used standard OLS regressions (of equivalised household consumption expenditure) and migration dummies to determine whether migrants are better off than non-migrants. A similar approach was used for the evaluation of migration's impact on primary school enrolment. However, regarding the analysis of the impact of migration on the likelihood of being poor, poverty probits were utilised. Some of the correlates employed by Litchfield and Waddington are human and physical assets, main economic activity, and region of residence.

Litchfield and Waddington observe, that even though the OLS regressions suggest migrants have a higher standard of living than non-migrants, the migration premium seemed to have halved between 1991/92 and 1998/99. The poverty probit for 1991/92 showed migrants having a lower probability of being poor (that is, relative to non-migrants), but that for 1998/99 did not indicate any statistically significant difference in the probabilities of being poor between migrants and non-migrants. Furthermore, when the analysis was extended to the non-monetary welfare indicator, the results showed little impact of migration on welfare. It is worth mentioning, however, that the absence of a correction for selectivity bias implies the parameter estimates of the study's linear

regressions are likely to be inconsistent, a limitation the authors acknowledge. Given the paucity – in the context of the Ghana literature – of rigorous quantitative analyses of migration, the study by Litchfield and Waddington is, nevertheless, an important contribution.

It is worth mentioning that although Tsegai's (2005) Volta Basin study focused on migration determinants, he found evidence suggesting that incomes of migrant households are higher than those of their non-migrant colleagues. Given that the study employed a methodology that corrected for selectivity-bias, this conclusion is noteworthy. It is also consistent with the results of Litchfield and Waddington (2003) regarding migration's impact on consumption welfare.

From the survey of the literature in this sub-section, the evidence on the impact of migration in Ghana is still evolving. In Ghana, even though the expression of concern about the negative effects of migration (usually, rural-to-urban) is very common, it does seem that the impacts on the migrants and on the sending households and communities are generally net-beneficial, whilst the net effect on destination communities is unclear. Given the limitations of the studies reviewed, it will be prudent to treat the available evidence with caution.

II. Review of relevant literature on remittances

4.4 General remittances literature

4.4.1 Background

Since the early 1980s, there has been a significant increase in the number of studies exploring the phenomenon of remittance transfers, that is, the transfer of money (or goods) from one household to another. Given that remittances are often sent by migrants, it is not surprising that many of the studies on remittances confine the analyses to remittances sent by migrants (see Lucas and Stark, 1985; Liu and Reilly, 2004; and Brown, 1997). It should be noted though, that remittances are not necessarily sent by migrants, and that sometimes migrants are rather the recipients of these

transfers. Furthermore, remittance transfers can occur outside the context of migration, even though such occurrences appear to be much less common. Studies that adopt a less restrictive approach – in the sense of not limiting analyses to the migration context – include Cox (1987), Ravallion and Dearden (1988), and McKay (2000). It is fair to say, however, that remittance transfers typically occur within the context of migration; in other words, remittances often take the form of transfers from (or to) migrants. What needs to be stressed, though, is that the strong link between remittances and migration does not imply that the latter is necessary for the former; in principle, private inter-household transfers can occur between non-migrant households.

It is expedient to note at this point, that a useful way of thinking about remittance studies is to consider them as part of the broader literature on private transfers. This is because in discussing remittances, the focus is on that subset of private transfers that occur between households; in general, private transfers also include private charitable donations to organisations, as well as bequests. Examples of studies covering non-remittance private transfers are Bernheim and Severinov (2003) and Light and McGarry (2004) – both examining bequests – and Schwartz (1970), which focuses on philanthropic private transfers. One way of distinguishing remittances from other private transfers is to describe them as private inter vivos transfers[38] (see Cox, 1987; and Cox and Rank, 1992). It is not surprising therefore that remittance studies draw on the wider literature on private transfers, and this literature review will similarly draw on the non-remittance private transfers literature where appropriate.

4.4.2 Some general issues

There are various ways of categorising the economic literature on remittances, one of which is in terms of the source of the transfer. Using this criterion, remittance studies may be classified into three, namely

i. Studies that examine remittances originating from within the domestic economy (for examples, see Johnson and Whitelaw, 1974; Schrieder and Knerr, 2000; and Banerjee, 1984);

[38] That is, transfers between living persons.

ii. Those that focus on international remittances (see Adams, 1991; Agarwal and Horowitz, 2002; and Funkhouser, 1995); and
iii. Studies that examine both international and domestic remittances (see Gubert, 2002; and Adams, 2004).

The remittance literature may also be broadly classified on the basis of whether they are microeconomic or macroeconomic studies. In this regard, it is worth noting, that whilst a large number (if not most) of macroeconomic remittance studies tend to focus on international remittances, studies of domestic remittance flows are often analysed within a microeconomic framework.

In noting the increasing economic research interest in remittance flows, it is important to highlight some of the data challenges associated with these studies. Owing to various limitations, many remittance studies employ data that are far from ideal. Although there are two main agents in a remittance flow (that is, the donor and the recipient), data relating to both agents are often unavailable. Where such data are available, their quality may be compromised if the survey depended on one agent for information relating to the other. For instance, data on urban-to-rural remittances may have been obtained from a survey of rural households (see Hoddinott, 1994 for an example), in which case, reliable detailed data on recipients can be obtained, but similar information about donors – such as their income levels and sources – may be inaccurate or unavailable. These data constraints can influence a study's balance of emphasis regarding remittance expenditures and remittance receipts.

Even though a remittance may be defined as a private inter-household transfer, it is often useful – especially, in empirical analysis – to distinguish between gross remittances and net remittances. Gross remittances refer to the total amount of remittances sent, whilst net remittances are the amount of remittances sent, net of the amount received. It has been observed, that the use of net remittances – rather than simply gross transfers – ensures that the analyst takes into account the full effects of these transfers on household behaviour and welfare (McKay, 2000). The use of gross remittances in empirical analyses may, however, be necessitated by a lack of data on (or for deriving) net remittances. On the other hand, remittance flows may be largely unidirectional, rendering the choice between gross and net remittances irrelevant (see, for example, Hoddinott, 1992). In cases where data are available, the use of both gross

and net remittances can be informative, since it would highlight the extent to which differences in the definition of a remittance affects the results of the analysis (see Ravallion and Dearden, 1988).

4.4.3 Motives for remitting

Theoretical analyses of remittances have been dominated by questions relating to the motivation for remitting. Why do private inter-household transfers occur? On the whole, the remittance literature identifies two main motivations for remitting, namely, altruism and self-interest or exchange[39]. Rapoport and Docquier (2005) have observed that until recently, altruism was more frequently assumed than tested against competing theories. Current thinking on remittance motivations, however, gives considerable importance to self-interest-based exchange. It is useful to emphasise that the debate about remittance motives is not trivial; it has significant implications for fiscal policy, since remittances' response to public transfers depends on the predominant remittance motive. This is because if remitters are motivated by altruism, then an increase in public transfers will lead to a reduction in private transfers, and this will result in the impact of the public transfers being less than originally planned (see Cox and Jimenez, 1990; and Cox and Rank, 1992). Thus, the incidence and effectiveness of public transfers are influenced by whether or not remittances are motivated by altruism or by self-centred exchange.

The basic principle underlying altruism is that, inter-household private transfers occur because the remitter or donor cares about the well-being of the recipient, and as a result, derives satisfaction from improvements in the recipient's welfare. More formally, altruism exists when a donor's utility function partly depends positively on the utility of the recipient. Thus, for instance, an adult might send regular remittances to his elderly parents, simply because increases in the parents' welfare increase his utility. As noted by Cox and Jimenez (1990), Garry Becker was one of the first to provide a theoretical framework for the altruistic motive. In his seminal contribution, Becker (1974) developed an economic model of social interactions, within which the implications of

[39] Elsewhere, self-interest and exchange are treated as separate motives (see, for example Park, 2003b), but – as suggested by Cox and Jimenez (1990) – there is a sense in which each of the two labels can broadly represent the same motive.

altruism – together with those of other socio-economic phenomena – were analysed. Other studies that espouse altruism include Ishikawa (1975) and Adams (1980). A key prediction of the altruistic model is that, ceteris paribus, there will be a negative relation between a recipient's pre-transfer income and the amount of remittance received (Cox and Jimenez, 1990). Even though the altruistic motive is plausible in many cases, there are various scenarios in which its validity is doubtful.

According to the exchange or self-interest model, reciprocity underlies remittance flows. In other words, remittance transfers are acts of repayment, or are sent with the explicit (or tacit) understanding that they will be paid back (not necessarily in the same form). A migrant, for instance, might send remittances to relations residing at the migrant's place of origin as a way of repaying the extended family's expenses on his/her education or migration (see Bates, 2000). Similarly, parents may sponsor a child's education in anticipation of receiving remittances when he/she enters the labour market after schooling. Remittances may also be motivated by the remitter's aspirations to inherit family property or by his/her vested interest in the proper maintenance of an investment at place of origin.

Various models of the exchange hypothesis are found in the literature. For example, Bernheim, Shleifer, and Summers (1985) developed a model of bequests, in which the testator intentionally influences the behaviour of beneficiaries via his choice of a bequest-sharing rule. Even though this particular model deals with bequests, it provides support for the notion that remittance behaviour is often motivated by self-serving exchange considerations. From his model of the exchange motive for sending remittances, Cox (1987) concluded, that contrary to what pertains under altruism, remittances do not necessarily decrease with increases in the recipient's income if remittances are motivated by exchange. One way of rationalising this result is to reckon, that by enhancing the recipient's bargaining power, the increased income can result in a higher amount of remittance receipt.

Whilst the pure altruistic and exchange models of remittance motivations have relevance in many scenarios, it is only fair to reckon that a more realistic explanation of remittance behaviour should incorporate elements of the two models. In a pair of influential papers, Robert Lucas and Oded Stark have formulated a model that exhibits

elements of altruism and self-interest in explaining the motivation for remittance flows (see Lucas and Stark, 1985; and Stark and Lucas, 1988). Cast in the context of the interactions between migrants and relatives back home (that is, at place of origin), Lucas and Stark (1985) and Stark and Lucas (1988) employ a game theoretic framework to advance a model of tempered altruism or enlightened self-interest. In this model, remittances are seen as one element in a self-enforcing arrangement between migrant and home. The model, thus, treats remittances as part of a co-insurance arrangement between the donor and the recipient, insuring both parties against shocks, such as, liquidity constraints, unemployment, and poor harvest. Even though the model emphasises the crucial role of self-interest as a motivation for remitting, it highlights the importance of altruism in reducing any inclination – on the part of the contractual parties – to renege on their obligations. The views of Lucas and Stark are further echoed by Bates (2000), who notes that the pleasure gained by parents from the success of their children helps to sustain the informal contractual arrangements. Additionally, the threat of social sanctions is usually enough to deter the migrant from breaking his (or her) promise (Bates, 2000).

Are the above theories (or models) of the remittance motive testable? If so, what is the extent of empirical evidence for them? Even though the theoretical explanations for remittance flows are testable, data constraints often render such an exercise far from ideal. Apart from the fact that reliable information about both donors and recipients may be unavailable, detailed information about remittance amounts (and not just remittance decisions) might be necessary for making inferences about transfer motives (see Cox, 1987). The following observation captures the data-related difficulties associated with the empirical testing of remittance motives:

> *"...it is extremely difficult to empirically discriminate between these different motives: most empirical studies regress remittances on a set of variables (which typically includes pre-transfer incomes of both senders and recipients), but any sign for these relations may be interpreted in a number of ways, and the additional information needed to implement more discriminative tests (e.g., longitudinal data on the timing of remittances, information on the migrant's education, the recipient household's assets and number of heirs, etc.) is rarely available in a sufficiently detailed manner" (Rapoport and Docquier 2005, p.10).*

In spite of the above constraints, various notable attempts have been made at ascertaining the extent of empirical support for the competing hypotheses about remittance motivations. On the whole, the evidence is mixed.

In the study by Lucas and Stark (1985), the proposed model of tempered altruism (or enlightened self-interest) was explored empirically using data from Botswana; findings from the analysis provided some support for the model. An implication of this model is that remittances often represents the outcome of a household strategy – via the migration of one or more its members – to diversify income and to spread risks across space and time. This is illustrated by the following evidence from Botswana:

> *... having been educated by the family, the migrant gains from higher wages but is then expected to repay them; the family gains assurance in undertaking riskier agricultural activities, knowing the migrant will support them during drought; sons remit in the hope of maintaining favour in ultimate inheritance" (Stark and Lucas 1988, p.478).*

It is worth noting also, that Cox (1987) – in applying his theoretical framework to United States data – found, that conditional on a remittance being sent, there is a positive relation between recipient income and the amount of remittances received. This finding contradicts the altruistic motive and provides support for the exchange model. Using another – but apparently richer – U.S. dataset, Cox and Rank (1992) concluded that empirical patterns for inter vivos transfers were more consistent with the exchange motive than with altruism. On the basis of survey data on Tongan and Western Samoan migrants in Sydney, Brown (1997) also found evidence to the effect that migrants' remittance transfers (to their countries of origin) are motivated by non-altruistic factors such as asset accumulation and investment back home. In their study of China, Liu and Reilly (2004) find mixed evidence for exchange and coinsurance, and none for altruism. Some empirical evidence consistent with the exchange motive can also be found in studies that utilise data on typical developing countries [see, for example, Hoddinott, 1992 (for Kenya), Cox and Jimenez, 1998 (for Colombia), and Gubert, 2002 (for Mali)].

In a study of international remittances using a Guyana dataset, Agarwal and Horowitz (2002) tested the validity of altruism and insurance – as remittance motivations – by employing a model that links the remittance behaviour of sole versus multiple-migrants

to the remittance incentive. They note that if remittances are underpinned by altruistic considerations, the presence of multiple remitting migrants will affect the average remittance amount, since migrants are simply concerned with the welfare of the non-migrating household. If, on the other hand, risk sharing[40] is the main motivation for remitting, the average amount remitted is expected to be unaffected by the presence of multiple remitting migrants. Agarwal and Horowitz found significant differences in remittance behaviour between single and multiple migrants in a manner consistent with the altruistic motive.

Following their modelling of the distribution of remittance receipts in Java (an Indonesian island), Ravallion and Dearden (1988) found evidence suggesting remittances in rural Java are motivated by altruistic considerations. They report that – in rural Java – reductions in recipient's income are accompanied by a more-than-proportional increase in remittance receipts. This result is seen as an indication "that the donor's marginal utility of recipient's income is not only positive, but also elastic in that income" (Ravallion and Dearden, 1988, p.43). Remittances in rural Java were also observed to be targeted to disadvantaged households, such as the elderly and the sick. Evidence for urban Java was, however, noticeably different; remittances were targeted to the unemployed, and the distribution of remittance receipts showed little aversion to inequality. Other studies that offer support for the altruistic motive include McGarry and Schoeni (1995a and 1995b).

On the whole, a number of studies suggest that motivations to remit tend to exhibit elements of both altruism and exchange. In the study by Lucas and Stark (1985), remittance patterns among individual migrants in Botswana were found to be consistent with the model of tempered altruism or enlightened self-interest. Park (2003a) set out to investigate, whether for developing countries, child-to-parent transfers are motivated by altruism or are meant to repay implicit loans taken up by children for human capital investment. Using a Malaysian dataset of child-parent pairs, Park found evidence suggesting, that – for individuals of post-secondary education – monetary transfers to parents are a combination of repayments and altruistic remittances. Secondi (1997) also suggest, that for rural China, altruism alone is inadequate for explaining monetary

[40] Here, risk sharing is a special case of the self-interest or exchange motive.

transfers between relatives, and that exchange considerations may be important. Other studies whose empirical findings are consistent with the tempered altruism hypotheses include Cox, Eser, and Jimenez (1998) and Foster and Rosenzweig (2001).

What is the main message from this survey of the literature on remittance motivation? The overriding point is that remittances are rarely motivated exclusively by altruism, and that very often the motivation lies somewhere along the altruism-exchange continuum. It has been suggested that the issue regarding which motive is more dominant depends, at least partly, on the nature of the relationship between the donor and the recipient (Park, 2003b); on the basis of an analysis of the First Indonesian Family Survey data, Park (2003b) concludes, that amongst three main types of transfers (that is, parent-to-child, child-to-parent, and inter-sibling), remittances between siblings are most consistent with the altruistic motive. Clearly, there is scope for further research into the subject of what influences remittance motives.

4.4.4 The literature on the empirical modelling of remittance flows

Despite the general lack of detailed and reliable data for analysing remittance flows, the empirical modelling of remittances has received significant attention, with key areas of investigation being the motivation for remitting and the determinants of remittance flows. Regarding the impact of remittances on recipients' welfare, there is an apparent paucity of studies. Since in the above review of the literature on motives for remitting, the empirical evidence on remittance motivations was discussed, this sub-section will only focus on the impact of remittances on recipients' welfare, and the modelling of remittance determinants, with the former being understandably brief.

Even though the welfare impact of remittances – as far as it relates to recipients – is very important, this subject has not been addressed by many studies, at least compared to the large volume of literature on remittance motives and determinants. Besides data constraints, this limited coverage might be explained by, at least, two factors. In the first place, the issue of whether households benefit from remittance receipts appears to be trivial; it does seem obvious that remittances will enhance the well-being of households. It is important to note, however, that the answer to this question is not as obvious as it

appears if one takes into account the counterfactual. In other words, it is vital to recognise that in the absence of remittances, members of a given household might explore some other avenue(s) for improving their welfare, such as, taking on an extra job or working extra hours. It is therefore possible, that the receipt of remittances can stifle a household's entrepreneurial drive, rendering members less adventurous in exploring viable productive activities. Furthermore, in cases where remittances are received from migrants, these transfers could well be substitutes for the migrants' income contribution in the absence of migration (see Adams, 2006).

Of course, remittances can have the effect of raising a household's productivity, but this is not automatic. Thus, the salient question is whether remittance receipts enable households to derive higher living standards than they would have had without such inflows. It is entirely plausible that the apparent triviality of this question – that is, the issue of whether (or not) remittances increase the welfare of households – might have contributed to the dearth of studies on the subject. The second possible – and probably, more likely – reason for the limited research in this area is the difficulty of modelling the counterfactual scenario.

Given the paucity of studies that analyse the impact of remittances on recipients' welfare, only two studies are reviewed here. In his study of Guatemala, Adams (2004) utilises data from a large and nationally representative household survey to examine the impact of domestic remittances and of international remittances (from the United States) on the welfare of recipients, and subsequently, analyses remittances' impact on poverty. Using multivariate regression analyses, Adams predicted household expenditures corresponding to two scenarios – "excluding remittances" and "including remittances" – for different groups of households. The "excluding remittances" expenditures were predicted for households that did not receive remittances, those that received internal remittances, and households that received international remittances, using parameters estimated from the sample of households that did not receive remittances. The "including remittances" expenditures, on the other hand, were estimated for only households that received remittances, that is, domestic remittance recipients and recipients of international remittances. In estimating the "including remittances" expenditures, Adams added the actual amounts of remittances received to the expenditures for the "excluding remittances" scenario. It is worth adding that the level

of household expenditures (per capita) was specified as a function of household characteristics and locational variables, with the household attributes including size, education, gender, and ethnicity.

Having established the counterfactual scenarios, Adams proceeded to examine the impact of domestic and international remittances on poverty by analysing their respective effects on household expenditures[41]. With only one exception, the study found that both domestic and international remittances have positive welfare effects; they both decrease the incidence, the depth, and the severity of poverty. The study finds, however, that remittances exert a bigger impact on poverty severity than on poverty incidence, a result Adams attributes to the very large share of remittances in the expenditures (incomes) of the lowest decile group.

The methodology employed by Adams is illuminating, as it gives considerable insight into the issue of the counterfactual. Nevertheless, a few brief comments about the study are appropriate. Firstly, the analysis would have been strengthened if an adjustment for selectivity bias had been made instead of the assumption that such a bias did not exist. It is worth noting also, that the methodology employed appear to rule out the possibility of a negative impact of remittances on welfare. This is because the "including remittances" expenditures were estimated by adding the actual amounts of remittances received to the "excluding remittances" expenditures. Thus, by default, the mean household per capita expenditure for the "excluding remittances" scenario will be less than that of the "including remittances" situation. Finally, by employing mean measures of the household per capita expenditure, the impact of remittances on the welfare of individual households was not captured. In spite of these concerns, Adams' analysis is an important contribution to the literature on remittances' welfare impact. More recently, Adams (2006) has employed data on Ghana to carry out a similar investigation; this study is discussed in the (next) section on Ghana remittance studies.

The results of Adams (2004) are generally consistent with those of Adams and Page (2005). Using cross-country observations on 74 countries, Adams and Page explore the impact of international migration and remittances on poverty in the developing world.

[41] Household expenditure was used as a proxy for household income.

In doing this, the study employed the basic growth-poverty model proposed by Ravallion (1997) and Ravallion and Chen (1997). Two equations were estimated – one specifying poverty as a function of mean per capita income, income distribution, and migration, whilst the other equation replaced the migration variable (in the first equation) with an index of international remittances. Some key findings of the study are worth noting. International remittances are found to exert a dampening effect on all three poverty indices used. For example, the study estimates that on average, a 10 percent rise in the share of remittances in a country's GDP will result in a 1.6 percent decline in poverty incidence. Adams and Page further observe that the poverty impact of international migration and remittances appears to vary across different regions of the developing world.

The subject of remittance determinants is one of the most empirically analysed remittance-related themes. Numerous studies of remittance determinants focus on the identification of the particular characteristics of individuals and households that influence remittance flows. One of the major issues in this regard is a distinction between two remittance decisions, namely, the decision regarding whether or not to remit, and the decision concerning the amount of remittance to send, given that a decision has been made to remit (see Oberai and Singh, 1980; Knowles and Anker, 1981; and Banerjee, 1981). In this regard, Banerjee (1981) has observed that although some studies – for example, Johnson and Whitelaw (1974) and Rempel and Lobdell (1978) – estimate remittance functions with observations on donors only, this approach ignores the remittance decision issue, and focuses only on the determinants of remittance amounts. In other words, a procedure that uses observations on remitters only, simply tackles the issue of how much to remit *given that a decision has been made to remit*. A more appropriate approach requires observations on both remitters and non-remitters.

A number of analytic and econometric issues arise from the above remittance decisions. Of analytic interest is the question of the sequencing of the remittance decisions; are the two decisions taken sequentially, or they occur simultaneously? The econometric problem relates to the nature of the dependent variable in typical remittance regressions. Liu and Reilly (2004) refer to the censored nature of the dependent variable, given that not all individuals/households remit positive amounts per period, posing problems for

the use of the OLS technique. Banerjee (1981) has observed that if the above decisions are taken sequentially, then the appropriate procedure for analysing the determinants of remittance expenditure is an estimation of two separate equations. He notes, however, that if the two decisions are made simultaneously, a single equation can be estimated by employing a Tobit regression.

Regarding the econometric implementation of the sequential treatment of the two remittance decisions, the application of Heckman's two-step technique has become standard practice (see, for example, Banerjee, 1984; Hoddinott, 1992; and Funkhouser, 1995). In this context, Heckman's two-step technique entails the estimation of two equations – a probit equation for the decision on whether or not to remit, followed by an OLS equation for the remittance level (given a decision to remit) – with an adjustment for selectivity bias made in the second equation. Besides yielding consistent parameter estimates, the application of Heckman's two-step method to remittance analyses permits a regressor's effect on the two remittance decisions to be different. The approach's drawback, however, is that estimates can be sensitive to the particular identification restrictions imposed (Hoddinott, 1992; and Liu and Reilly, 2004).

In treating the two remittance decisions as being made simultaneously, the commonly used econometric method is Tobit estimation. The Tobit estimation technique – unlike Heckman's two-step method – is a single equation model. The model – attributed to Tobin (1958) – employs the maximum likelihood procedure to estimate regression functions for censored samples (Gujarati, 2003). In the context of a remittance function, the Tobit estimation method estimates the relation between remittance amounts and suitable regressors, such as, socio-economic characteristics of the remitting household, using observations on both remitters and non-remitters. Although Tobit parameter estimates are consistent, the technique's application to remittance analysis has been criticised for constraining the effects of regressors on the two remittance decisions to be the same (Liu and Reilly, 2004). According to Brown (1997), however, the application of the Tobit technique to remittance analysis is convenient, since it allows the analyst to identify a single set of variables most significant in influencing "remittance behaviour". Examples of studies that have applied Tobit estimation to the analysis of remittances include Banerjee (1981), Brown (1997), and Liu and Reilly (2004).

At this point, it will be appropriate to highlight some of the literature's evidence on remittance determinants. Investigations into remittance determinants have often hypothesised that remittance flows are influenced by various factors, some of the major ones being donor's income, donor's educational attainment, and recipient's income net of remittance receipts (see, for example, Banerjee, 1981; Gubert, 2002; and Lucas and Stark, 1985). Other factors that are reckoned to affect remittance behaviour are the migration status of the potential donor, the duration of donor's migrant status (that is, if a migrant), and the dependency burden of the recipient household, amongst others (Knowles and Anker, 1981; Banerjee, 1984; Stark and Lucas, 1988; and Brown, 1997).

Empirical evidence of the importance of remitters' incomes in influencing remittance behaviour has been highlighted by Lucas and Stark (1985). In their analysis of remittance patterns amongst individual migrants in Botswana, Lucas and Stark found evidence consistent with a positive effect of migrant income on remittance levels. Similar evidence is reported in a study on China (Liu and Reilly, 2004). Liu and Reilly employed Tobit analysis to examine the determinants of remittances (sent by migrants) to rural households, using data on migrant workers drawn from the Jinan Municipality in the Shandong province. In addition to estimating the remittance-income (donor's) elasticity to be 0.82, Liu and Reilly found labour earnings to be the most robust determinant of remittance levels. In a comparative analysis of remittances by Pacific island migrants, Brown's (1997) use of the Tobit estimation technique established evidence suggesting that higher migrant incomes lead to larger amounts of remittances transferred.

On the issue of how donors' incomes affect the decision regarding whether to remit, the available evidence typically comes from studies that employ the Heckman two-step technique, an exception being Knowles and Anker (1981). Although Knowles and Anker estimated separate equations for the two remittance decisions (that is, the decision regarding whether to remit, and the one on remittance size, given that a decision has been made to remit), each of the two equations was estimated using the OLS technique. In a study of the remittances sent to the rural sector (place of origin) by migrants in Delhi, India, Banerjee (1984) employed the Heckman two-step method to examine the major determinants of the two migration decisions. On the whole, Banerjee found mixed evidence on the influence of donors' incomes on remittance behaviour;

migrants' incomes had no effect on the decision to remit, but were important in explaining the size of remittances.

Another factor that is expected to influence remittance behaviour is the recipient's welfare, commonly proxied by recipient's income net of remittance receipts. As mentioned earlier, the relationship between remittance size and recipient's income is crucial for identifying whether remittances are motivated by altruistic or exchange considerations (Cox, 1987). Since in our survey of the empirical evidence on remittance motivations, the relationship between remittance levels and recipients' incomes was discussed, we only note here that the evidence is mixed (see, for example, Knowles and Anker, 1981; Lucas and Stark, 1985; Cox et al., 1998; and Liu and Reilly, 2004).

There are, at least, two ways by which a donor's educational attainment can influence remittance flows. An obvious one is through its effect on the donor's income. Secondly, since a (potential) donor's level of education often signals the amount of educational investment made by his/her parents or family, it is expected to influence remittance flows, especially if the (potential) donor is obliged to reciprocate the family's gesture. Empirical evidence on the remittance impact of (potential) remitters' educational attainment is available in various studies. Even though a number of studies suggest donors' educational attainment exert a positive impact on remittances (see Stark and Lucas, 1988; and Gubert, 2002), there are others that do not concur (see Brown, 1997; and Liu and Reilly, 2004).

In a recent study of western Mali, Gubert (2002) employed Powell's Censored Least Absolute Deviation (CLAD) method, as well as more conventional parametric techniques to analyse the determinants of remittances from both internal and international migrants. Gubert finds robust evidence supporting the view that migrants with higher levels of education are more likely both to remit and to remit higher amounts than their colleagues with lower educational attainments. The analysis of Kenyan data by Knowles and Anker (1981) also found evidence consistent with a positive impact of donors' educational attainment on both the decision to remit and remittance size. Other studies reporting a positive impact of remitters' incomes on remittance size include Stark and Lucas (1988) for Botswana, and Banerjee (1981) for Delhi, India.

On the basis of his comparative study of remittances sent by Western Samoan and Tongan migrants (resident in Sydney), Brown (1997) concludes, that the level of educational attainment before migrating is, apparently, not associated with any differences in migrants' remittance behaviour. Similar remarks are made by Liu and Reilly (2004) in reference to their investigation of migrants' remittances using data from China. Liu and Reilly observe that a migrant's educational level exerts little influence on either the event of remittance or the size of remittance. Also worth citing is Funkhouser's (1995) comparative analysis of remittances using data from El Salvador and Nicaragua. Applying both Heckman's two-step technique and the Tobit model, Funkhouser found – for both El Salvador and Nicaragua – similar impacts of donors' educational attainment on remittances; education is negatively correlated with the probability of remitting, but for remitting migrants, education is positively related to remittance size. With regards to remittances from migrants in Delhi, Banerjee (1984) found no effect of educational attainment on the decision to remit, but observes that they are important in explaining remittance levels. It is fairly obvious, that whilst one might expect remitters' educational attainments to influence remittances, the nature of the influence, if any, is largely context dependent.

Studies on migrants' remittances often explore the impact of migrants' duration of stay (at current location) on remittance flows. Evidence found for Kenya suggest, that migrants' duration of stay has a negative effect on the decision to remit, but does not affect remittance size (Knowles and Anker, 1981). This result suggests

> *"...that the tendency for remittances to decline with the length of time migrants have been away from home operates primarily to reduce the tendency to remit at all, rather than the amount of income remitted. This is again consistent with the view of remittances as a form of insurance which, when deemed to be no longer necessary, is dispensed with altogether instead of being scaled down in magnitude"* (Knowles and Anker, 1981, p. 221).

Other studies suggest a positive relationship between remittance size and migrants' duration of stay (Banerjee, 1981 and 1984; and Stark and Lucas, 1988), even though an inverted U-shape relationship might hold in other cases (see Liu and Reilly, 2004). Stark and Lucas (1988) actually reported an inverted U-shape relationship, but note, that for all practical purposes, the relationship is positive, since remittances begin to fall

around the thirtieth year of the migrant's stay at the destination. In the case of Liu and Reilly (2004), an inverted U-shape relationship between remittance size and migrant's duration of stay was established, with remittances peaking somewhere between the second and fourth year of the migrant's stay. Brown (1997), however, found a positive relationship for his Western Samoan sample, and a negative (but statistically insignificant) relationship for the Tongan sample.

Evidence abounds in the literature about the influence of other factors on remittances. Banerjee (1981 and 1984), for instance, has highlighted the remittance impact of the dependency burden of both remitting households and recipient households. On the basis of his analysis of Indian data, Banerjee (1981) reports a negative relationship between remittance size and the dependency burden of the remitting household, but a positive relationship between remittance size and the recipient household's dependency burden. Similarly, the probability that remittances will be sent increases with the rural (recipient) sector's dependency burden, and falls as the dependency burden in the urban (remitting) area increases (Banerjee, 1984). Brown (1997), on the other hand, did not find any impact of the remitting household's dependency burden on remittances. With reference to the results of their empirical analysis, Ravallion and Dearden (1988) observe, that no significant effects of household size on receipts or outlays are revealed for their rural sample; evidence from the urban sample, however, suggests that remittance receipts decrease with household size.

Before ending this sub-section, it is worth mentioning some empirical evidence on other determinants of remittances. According to Banerjee (1984), migrants who have left their wives in the rural sector are more likely to remit than unmarried migrants. On the basis of evidence from their rural sample, Ravallion and Dearden (1988) also observe an apparent lack of influence of household head's age on remittance receipts, whilst remittance outlays reveal a plausible inverted U-shaped relationship, with turning points at 61 and 45 years for gross and net outlays, respectively. For their urban sample, Ravallion and Dearden observe a strong inverted U-shaped relationship between remittance receipts and age, whilst the relationship is U-shaped for remittance outlays. Finally, empirical evidence obtained by Knowles and Anker (1981) suggest, that factors that tend to positively affect the level of remittances include migrant status, ownership

of a house or business in the home area, and the number of wives and children living away.

4.5 Ghana remittance studies

Despite the fact that remittance transfers are commonplace in Ghana, very few economic studies analyse Ghana's remittance flows. This dearth of literature may be attributed largely to the general lack of relevant household-level data prior to the mid-1980s. This paucity of data notwithstanding, Caldwell's (1969) pioneering study of Ghana's rural-urban migration offers significant insights into migrants' remittance transfers. More recently, there has been a burgeoning of Ghana remittance studies, with a number of these studies utilising data from one or more waves of the Ghana Living Standards Surveys (see, for example, Quartey and Blankson, 2004; Coulombe and McKay, 2005; and Adams, 2006).

In his discussion of rural-to-urban migration in Ghana, Caldwell (1969) observes, that in economic terms, the most important feature of migration is the associated counter-flow of remittances. Using data from a survey[42] organised over the period 1962-64, Caldwell observes that migrants' feelings of obligations to their rural homes are widespread. This sense of obligation – which appears to reflect both altruistic and exchange considerations – is central to the flow of remittances established in the survey. On the basis of his survey data, Caldwell states that probably one-third of rural Ghanaian households receive money from urban areas, and one-third of these households reckon that without these remittances, they will be 'very poor'. Caldwell's study further suggests that parents are the most frequent recipients of remittances; of those migrants who sent remittances whilst working in the urban sector, 77 percent sent money to one or both parents.

Regarding the use to which remittances are put, Caldwell identifies the major one as being the maintenance of the rural household. Remittances are, however, sometimes used as financial capital, to finance the education of younger relatives, or to assist with specific projects, such as the building of a family house or the securing of a farm. These

[42] According to Caldwell (1968), the survey covered 1,782 rural households and 585 urban households.

findings on the use of remittances are similar to those of a more recent study by Tiemoko (2003). Mazzucato, Kabki, and Smith (2006) have also observed that remittances (from Ghanaian migrants in the Netherlands) are sent for housing, businesses, and funerals. It is important to note that Caldwell (1969), Tiemoko (2003), and Mazzucato et al. (2006) place remittances within a social context. In particular, Caldwell emphasises the role of remittance transfers as part of a related set of activities that link migrants to their rural places of origin. These other activities include visiting the village (with varying degrees of regularity), the transmission of skills to the village, as well as the building of houses in the village.

The strong link between Ghana's migration and remittance flows is amply supported by anecdotal evidence. At the heart of Ghana's migration and remittance flows is the importance of the extended family system and of intra-household economic decision making. The typical Ghanaian rural household is a large one, possibly comprising more than one nuclear family. Here, financial limitations would often imply that the sponsoring of a child's education (especially beyond the basic level) would be at the expense of the education of some other household member(s). Factors informing the selection of the child to sponsor might include gender and academic promise. Given the strong link between education and rural-to-urban migration, it is the educated household member who is more likely to migrate to an urban centre. This individual might even receive financial support (from the household) to migrate. The support provided by the household – that is, towards the education and/or migration of a household member – is typically carried out with the express or tacit understanding that the sponsored household member will reciprocate the gesture.

Under these circumstances, a migrant is obliged to return the favour. Although reneging on such informal contracts is a possibility, it is not likely. One main reason for the likely compliance is the migrant's sense of altruism towards the extended family back home; a sentiment engendered by family ties. Similarly, the satisfaction gained by parents from the success of their children helps to keep the informal contract intact (see Bates, 2000). Moreover, any tendency for the migrant to renege is likely to be stifled by the fear of social reprobation or by an interest in family inheritance (see Bates, 2000; Lucas and Stark, 1985). This is particularly pertinent if the migrant intends to eventually return to the rural home. For many of Ghana's migrants, however, the sending of remittances is

done willingly, as reflected in the following comment by a Ghanaian migrant in London:

> *"The ability to send remittances is a source of great pride"* (Cotula et al. 2004, p. 43).

The form of "repayment" associated with these informal contractual arrangements varies, but remittance transfers constitute a main kind.

One other form of "repayment" is kin-fostering (amongst the Asantes, this typically takes the form of a male migrant fostering the child of a sister). Fostering in this context entails the child of a migrant's relative migrating (usually from the rural area) to become part of the migrant's household in the urban locality. Regarding the terms of this arrangement, there is a wide spectrum of variation. At one end, the bulk of the benefits are reaped by the fostered child (and the parents). This is where the child joins the urban household to enjoy a status almost the same as that of the migrant's own children. Here, the migrant provides for the day-to-day upkeep of the child, and also sponsors his/her education or apprenticeship, as the case may be. Kin-fostering in this circumstance can be viewed as a disguised form of remittance flow. At the other end of the scale of kin-fostering arrangement, the child's status within the urban household is only better than that of a servant. In this scenario, the child will typically not receive (or continue) formal education, but may learn a trade eventually. In her study of children's independent migration and education in Ghana, Hashim's (2005) narration of the account of a fostered girl contains elements of the latter fostering arrangement:

> *"Afifo[43] is a 12 year-old girl whose father and mother had both told me had been moved to her uncle's in order that she might have a better education, since her uncle lived in a large town with better schools and with electricity. On tracing Afifo to her uncle's, however, she informed me that although she was attending school, she had in fact moved to cook and clean for her uncle as his wife was a full-time student.*
>
> *She complained that she was shouted at a lot by her aunt. She also said, 'When I was at home I would eat in the morning and they would give me chop money[44],*

[43] All the respondents' names have been changed in order to protect their identities.
[44] This refers to money to purchase food with outside the house.

and when I came home they would give me food. Here it is not until I return home that I eat.'" (Hashim 2005, p.19).

Throughout Ghana, the exchange of visits and, more recently, of telephone calls help cement the link between migrants and those left behind, thereby enhancing remittance flows. Even though it is the migrant who bears the onus of visiting, occasional visits from rural folks to urban-based migrants are not uncommon. As observed by Caldwell (1969), the acceptable minimum frequency of visits (from the urban-based migrant) is about once a year. When a rural dweller visits a rural-to-urban migrant, the former is almost certain to bring along generous amounts of items, such as, foodstuffs, fish, or game. Similarly, the guest is unlikely to return to the village empty-handed; he/she would usually return with cash remittance and, possibly, some urban goodies. Visits of rural-to-urban migrants to their villages are often routine, mainly to check on how their parents and other relatives are faring, many are primarily funeral-related. These visits to the rural areas offer additional opportunities for the exchange of remittances (migrants often giving out cash, whilst receiving foodstuffs from their relatives).

The role of remittances in poverty alleviation has featured prominently in the more recent Ghana remittance literature. Using data from the third and fourth waves of the Ghana Living Standards Survey, Coulombe and McKay (2005) estimate the size of total remittances in Ghana, and also explore the role of remittances in the selective poverty reduction the country expressed in the 1990s. According to Coulombe and McKay, 29 percent of households received domestic remittances in 1991/92, whilst the corresponding figure for international remittances was 6 percent. In 1998/99, however, the proportions of households receiving domestic and international remittances increased to 34 percent and 8 percent respectively. Furthermore, in both 19991/92 and 1998/99, domestic remittances accounted for more than half the total remittances received by households.

Other findings of Coulombe and McKay are worth highlighting. Between the two survey years, domestic remittances received by households increased from 100.2 million dollars to 202.2 million dollars. With regard to international remittances received by households, the overall amount increased from nearly 49 million dollars in 1991/92 to more than 135 million dollars in 1998/99, with both the amounts and the

massive rise largely accounted for by remittances from outside Africa. Although the total amount of domestic remittances received by households was higher than the corresponding amount of international remittances, the average value of international remittances (for recipient households) exceeded that of domestic remittances. Coulombe and McKay further draw attention to the general infrequency and irregularity of remittances, suggesting they might not be a reliable source of income for the typical Ghanaian household.

In a recent study of Ghana's Volta Basin, Tsegai (2005b) evaluates the impact of migration and remittances on farm and non-farm self-employment income. Using iterated Three Stage Least Squares (3SLS), Tsegai's analysis suggests that out-migration has a negative impact on the direct household farm income in source areas. On the other hand, the study finds that remittances sent by the migrants fully compensate for the negative effect of lost-labour. Tsegai's findings are thus consistent with the view that the migration-cum-remittance livelihood strategy has an overall beneficial impact on migrant-sending households.

As mentioned in the previous sub-section, Adams (2006) has very recently examined the impact of remittances on poverty in Ghana. Adams' methodology is generally similar to that of his earlier work on Guatemala (Adams, 2004), the main methodological difference being the use (in the Ghana study) of a two-step Heckman-type technique to test for selectivity bias. The first step of the technique consisted of a multinomial logit model, from which a selectivity variable was derived and included as a regressor in a household expenditure equation in the second stage. This expenditure equation was then estimated by ordinary least squares. Adams' results did not provide evidence for the presence of selectivity bias. As a result, the study proceeded with the determination of counterfactual income estimates without making an adjustment for sample selection bias. Thus, the actual computation of the counterfactual income estimates was identical to the approach adopted in the earlier Guatemala study. Given that Adams' (2004) procedure for obtaining the counterfactual income estimates was described in the previous sub-section, it is not repeated here.

Adams (2006) observes that with only one exception, both internal and foreign remittances lead to a reduction in the incidence, the depth, and the severity of poverty in

Ghana. Furthermore, poverty reduction is larger when foreign, as opposed to internal, remittances are included in household income, and when poverty is measured using the *depth* and *severity* indices. Whilst acknowledging the immense value of Adams' (2004) study to the Ghana remittance literature, it is worth noting that most of the concerns – noted in the previous sub-section – about Adams' Guatemala study are applicable to the Ghana study; the only exception is the comment about the absence of a test for selectivity bias in the earlier study.

Tiemoko (2003) also provides additional insight into remittances sent to Ghana by international migrants. Using results of a survey of over 600 return migrants to Ghana and Cote d'Ivoire, as well as qualitative research with migrants remaining in London and Paris, Tiemoko explores the influence of family (left behind by the migrants) on migrants' return vis-à-vis the transfer of financial, social, and human capital from the migrants. According to the study's findings, family-influenced Ghanaian migrants sent more than twice the average amount of remittances transferred by non-family-influenced Ghanaian migrants. This result highlights, once again, the dominant influence of the family on migration and the associated remittance flows.

On the basis of an analysis of sources of household incomes, Coulombe and McKay (2005) observe, that whilst remittances constitute a significant income source for many Ghanaian households, they were particularly important in 1998/99 for households in the rural forest zone, especially food farming households (the poorest economic activity category). Remittances are identified as a possible major factor underlying the large poverty decline observed in this rural forest zone, possibly more important than increased agricultural productivity. Quartey and Blankson (2004) also find support for the view that remittances are crucial for poverty alleviation. Pooling GLSS3 and GLSS4 datasets into a pseudo panel, Quartey and Blankson observe, that Ghana's migrant remittances are counter-cyclical, with inflows rising in periods of adverse economic shock; in addition, remittances are found to have a positive welfare impact on households, tending to reduce the effects of adverse economic shocks, especially for food crop farming households. Coulombe and McKay (2005), on the other hand, are of the view that – relative to international remittances – domestic remittances have been more important in Ghana's poverty reduction, and have exerted a slight moderating influence on inequality; additionally, international remittances have a tendency to

increase domestic inequality, even if marginally. Quartey (2005) has also drawn attention to remittances' potential for boosting economic growth in Ghana.

Informal remittance channels are reckoned to play a big role in the transfer of remittances to Ghanaian households. Remittances sent through these channels include those sent through informal money transfer agencies, as well as remittances sent in person (for example, through friends and relatives). As a result, estimates based on the records of Banks and formal money transfer institutions are likely to vastly underestimate the amount of remittances received in Ghana (Addison, 2004; and Coulombe and McKay, 2005). As noted by Higazi (2005), money transfer operators in industrialised countries (and often working from Ghanaian stores) – together with foreign exchange bureaux – represent a crucial component of the informal remittance transfer system. Given the large number of Ghanaians domiciled outside the country, especially in Europe and North America (COMPAS, 2004; and Higazi, 2005), it is not surprising that these informal remittance transfer agencies appear to be thriving.

4.6 Conclusion

The importance of migration and remittances to livelihoods in developing countries is evident from their prevalence and welfare impacts. Whilst conceptually, migration is different from remittance flows, in practice these activities are often pursued as part of a family strategy to diversify income across space and time. A review of the literature on Ghana's migration and remittance flows suggests that these observations are similarly applicable to Ghana. A key issue identified in both the migration and remittance studies is the difficulty associated with the estimation of their welfare impacts. In this context, it is pertinent to note that any credible estimation of the welfare impact of these phenomena can hardly be carried out without the determination of counterfactual scenarios.

The review of the Ghana migration literature suggests that with the exception of a couple of old studies (Beals et al., 1967; and Beals and Menezes, 1970), the analysis of Ghana's migration is largely dominated by descriptive studies that place a lot of emphasis on rural-to-urban migration. In recent times, however, the use of econometric modelling to analyse migration from a microeconomic perspective has been a refreshing

development (see Litchfield and Waddington, 2003; and Tsegai, 2005). Whilst social and other considerations cannot be discounted, the importance of economic considerations in migration decisions has been highlighted in the Ghana literature.

Regarding studies on Ghana's remittances, these mainly focus on migrant remittances. Thus, remittances from non-migrants appear to play a much less important role. Whilst this may be true, it will be useful to know the extent of Ghana's non-migrant remittances. Furthermore, even though in comparison with international remittances, domestic remittances are received by more households (Coulombe and McKay, 2005), the Ghana studies tend to place more prominence on international remittances. An in-depth analysis of internal remittance flows would therefore be worthwhile.

On the whole, there is ample scope for further research into Ghana's migration and remittance flows. Other specific themes that could benefit from further research include the poverty and welfare impacts of migration and of remittances, the roles of different types of these phenomena (for example, cash versus in-kind remittances, and internal versus international migration), and the various aspects of the migration-remittance linkage in Ghana. The present study will address some of these issues.

Chapter Five:
Data and Methodological Approach

5.1 Introduction

As stated in the introductory chapter, the main aim of the present study is to examine – within the context of rural-urban linkages – the welfare impact of Ghana's migration and remittance flows. Given the empirical nature of the research and the critical role of data and methodology in such studies, this chapter has a two-fold objective. Firstly, it aims at discussing the data used to address the research questions. Secondly, it outlines the broad methodological approach adopted, highlighting how this is informed by the available data. To this end, the next section examines ways of tackling the main research questions and the type of data required for achieving that. The third section discusses the available data for the analyses and their implications for the particular type of methodology employed. The fourth section concludes the chapter.

5.2 Ways of addressing the key research questions and their data requirements

In the context of rural-urban linkages, the principal research questions posed in this study include the following:

i) What is the impact of migration on migrants' welfare?

ii) What is the impact of remittances on recipients' welfare?

iii) What are the poverty impacts of migration and remittances?

In principle, how could one tackle the above questions, and what kinds of data would be required for such an investigation? For the purpose of this discussion, one only needs to focus on the first two questions since the third utilises results from the first two. Clearly, a common feature of all the questions is impact evaluation. In other words, each of the questions generally focuses on the examination of the welfare impact of either migration or remittances.

Central to the evaluation of the welfare impact of an activity (or intervention) is the determination of the counterfactual, that is, a hypothetical scenario of what the welfare

profile would have been in the absence of the activity. The counterfactual is hypothetical because it is impossible to know exactly what the welfare levels would have been if the intervention (or activity) had not occurred. Notably, all available methods for potentially addressing the research questions employ counterfactual scenarios, and rightly so, since the construction of the counterfactual is necessary for this type of analysis. Thus, a method's suitability may be judged by its capacity for generating a realistic counterfactual. As noted by Duflo and Kremer (2003, p.4),

> "The critical objective of impact evaluation is therefore to establish a credible comparison group, a group of individuals who *in the absence of the program* would have had outcomes similar to those who were exposed to the program. This group should give us an idea of what would have happened to the members of the program group if they had not been exposed, and thus allow us to obtain an estimate of the average impact on the group in question."

Methods for evaluating welfare impacts are of two broad types: experimental (or randomized) and non-experimental. Experimental methodologies randomly select a control group prior to the application/onset of the activity, and individuals or households belonging to this group are then exempted from the intervention/activity (see Burtless, 1995; World Bank, 2007; and Galasso, Ravallion, and Salvia, 2001). Obviously, this approach is suitable for evaluating interventions for which participation can be controlled by the researcher or for which participation is randomly determined naturally. Thus, migration and remittance flows are not activities whose welfare impacts can be assessed experimentally, since participation is neither random nor subject to a researcher's influence.

Non-experimental approaches, on the other hand, consist of a wide range of techniques that construct a control group to facilitate comparisons with a treatment group (see World Bank, 2007; and Moffitt, 1991). These techniques include propensity score matching, reflexive comparisons, and selectivity-adjusted modelling. Propensity score matching attempts to generate a counterfactual by matching each activity (or programme) participant with a non-participant deemed very similar. This is done by identifying characteristics essential for the decision to participate, and using these to predict – for both participants and non-participants – the probability of participating in the activity/programme (see Jalan and Ravallion, 1999; Duflo and Kremer, 2003; and

World Bank, 2007). The matching of participants with non-participants can be carried out prior to the intervention or after it has occurred. The data requirement for pre-activity matching is more challenging since the data must include characteristics of participants and non-participants both before and after the activity, and these data are often not observed. Although propensity score matching is appealing, its suitability for assessing the welfare impact of migration (or remittance flows) is doubtful. This is because whereas migration and remittance flows are activities reckoned to be characterised by selection bias, propensity score matching is unlikely to neutralise the effects of all such biases.

A reflexive comparison evaluates the welfare impact of an activity (or programme) by comparing participants' welfare levels before and after the activity. Thus, participants serve as both treatment and control groups. This method clearly requires panel data, but many developing countries lack such datasets on migration and remittances. In this regard, it is worth noting that some have attempted to circumvent the lack of panel datasets by using repeated cross-sectional data to generate pseudo-panel data (see, for example, Bourguignon, Goh, and Kim, 2004). In the case of Ghana, however, there are comparability issues with the migration and remittance sections of the few nationally representative cross-sectional datasets available.

Apart from the fact that panel datasets on migration and remittances are less common than cross-sectional data, the use of reflexive comparisons to evaluate welfare impacts is problematic. This is because a simple "before and after" comparison fails to capture the appropriate counterfactual; a comparison of an individual (or household) over time does not necessarily account for changes in other factors over the time period. For example, in the case of migration, an individual's welfare level prior to migrating is not a suitable counterfactual; what is needed is an estimation of what the individual's current welfare level would have been if he/she had not migrated.

5.3 Data and methodological approach

In reviewing the literature on migration and remittance flows, we noted that data limitations constitute a major challenge to the analysis of these two phenomena. The data constraints take various forms, ranging from a partial lack of data for the relevant

period to a complete absence of data. In particular, migration and remittance researchers are often confronted with data that are far from ideal, an example being a lack of panel data for a study of migration dynamics. With regard to panel data, their importance for the analysis of migration dynamics is illustrated by how they have been used to examine the interplay amongst marriage, migration, and risks in rural India (see Rosenzweig and Stark, 1989). Moreover, as observed by Rapoport and Docquier (2005), the availability of longitudinal data can provide valuable information about the timing of remittances; such information can be critical to the understanding of the motivation to remit.

Clearly, data-related limitations have implications for the choice of methodology employed. Given the particular data constraints, the choice of methodology assumes increased importance, since the methodological approach should circumvent the limitations, whilst addressing the research questions in a reasonably credible manner. For the present study, whilst the availability of panel (or some other enhanced) data would not have altered the broad methodological approach of constructing counterfactual scenarios, it could have made possible the use of better regressors for the econometric analysis. This sub-section discusses the data used in the study and provides a broad outline of the methodological approach adopted; details of the methodology are provided in chapters six and seven.

5.3.1 Data and methodology – migration

In spite of the huge interest in migration research, these studies are often hampered by a lack of suitable data. As noted by Bilsborrow (2005), population censuses are the most common source of basic migration data. Economic migration studies, however, usually analyse migration in relation to some other issue. For instance, the study may examine the impact of migration on poverty (see, for example, Litchfield and Waddington, 2003), the links between migration and unemployment (see Todaro, 1969), or migration-remittance interactions (see Brown, 1997; and Stark and Lucas, 1988). Where migration is being analysed in conjunction with some other issue, the usefulness of population census data tends to be very limited, and multi-topic household surveys are often the preferred data source. This is because in comparison with household surveys, population censuses understandably collect less detailed household level data.

This study's migration analysis uses data from the 1991/92 and 1998/99 Ghana Living Standards Surveys (GLSS); these surveys are a series of nationally representative household surveys, the first of which was carried out in 1987/88. The 1991/92 and 1998/99 surveys, being the third and fourth in the series, are often referred to as GLSS3 and GLSS4, respectively. Owing to a difference – between the two surveys – in the migration questionnaire design, the 1991/92 data do not permit a precise identification of migrants (as defined in this study)[45]. As a result, although we use both datasets for a descriptive analysis, an econometric analysis is carried out with the 1998/99 dataset only. Also worth mentioning is the fact that the migration data are available at the individual level.

The GLSS datasets are immensely useful for analysing various aspects of livelihoods in Ghana. Apart from the demographic information collected in the surveys, the data cover – in varying degrees of detail – various aspects of living conditions, such as, consumption, education, health, housing, employment, migration, and remittance flows. Furthermore, the datasets facilitate decompositions of analyses on the basis of several categories, such as, administrative regions, ecological zones, rural-urban location, and gender of household head. The meticulous statistical methods employed in the surveys further make the GLSS data the most widely used survey data on living conditions in Ghana.

Despite the fact that household surveys usually provide useful information for examining migration and livelihoods, they often lack the complete range of data required for exploring all aspects of the subject. In this respect, the GLSS datasets are no exception. This lack of comprehensive migration data is apparently due to the surveys' coverage of multiple topics. Indeed, it is probably unrealistic to expect multi-topic household surveys to cover topics such as migration and remittances in complete depth. This is because of the wide range of questions required for such an exercise, coupled with the fact that other important topics must be given reasonable coverage in the survey. It would seem then, that the data required for studying all aspects of migration can only be available from a specialised survey on migration.

[45] On the whole, the migration-related questions asked in the two surveys were very similar, but not identical.

Apart from providing information about migrants' age and gender, the GLSS4 dataset contains other valuable information. These include migrants' marital status, highest educational qualification, employment category, and main reason for moving from previous place of residence. Migration-related data absent, however, include information relating to seasonal migration, step migration[46], and chain migration[47]. It is also not possible to analyse the migration history of individuals using the datasets since the data are not longitudinal. Data on the financial cost of migration and the sources of funding are also unavailable. While probably all the mentioned information can be collected only in a specialised survey on migration, it might be possible to obtain some of these through the inclusion of an additional question or two. For example, insight into migration histories can be gained by including a question similar to the following:

> *In how many localities has this person ever resided for a period exceeding three months?*

In spite of its lack of data on some important issues relating to migration, the GLSS4 dataset has enough information to enable this study's research questions to be addressed satisfactorily.

Given the available data, how and to what extent can the research questions be tackled? Since we aim to analyse the impact of migration on migrants' welfare, the use of experimental techniques is ruled out. The research questions would be addressed using selectivity-adjusted modelling. This stems from its appropriateness for evaluating welfare impacts in cases where selectivity bias is likely to be present.

The details of the modelling strategy are provided in the next chapter (on migration), but an outline is given here. A major component of the modelling approach consists of the estimation of selectivity-adjusted welfare equations for both migrants and non-migrants. The parameters of these equations are then used to estimate – for cases where welfare levels are unobserved – individual migrant and non-migrant welfare levels. For scenarios where actual welfare levels are observed, however, we simply estimate welfare using the unadjusted welfare equation. In other words:

[46] Step migration refers to a series of small migratory movements as may occur when a person first migrates from a village to town, and subsequently migrates to a city.
[47] Chain migration is the phenomenon whereby a person's migration is facilitated by the support provided by individuals who have already charted that migratory path.

i) Each migrant's current welfare level is estimated using the unadjusted migrant welfare equation;

ii) The selectivity-adjusted non-migrant welfare equation is used to predict what each migrant's current welfare level would have been if they had not migrated;

iii) Each non-migrant's current welfare level is estimated with the unadjusted non-migrant welfare equation;

iv) The selectivity-adjusted migrant welfare equation is used to predict what each non-migrant's current welfare level would have been if they had migrated.

The above counterfactual scenarios facilitate the estimation (for any individual in the sample) of the proportionate welfare gain from migration. Consequently, the mean proportionate welfare gain can be calculated for relevant groups of individuals. It should be noted that the described procedure is applied separately to the cases of urban-to-rural migration and rural-to-urban migration.

Before discussing the data and methodological issues relating to the remittance analysis, it is worth commenting on an implication of the migration data being available at the individual level whereas the welfare data are at the household level. Basically, owing to the lack of welfare data at the individual level, what this study uses – as a proxy for a migrant's (or a non-migrant's) welfare level – is the consumption welfare per adult equivalent of the household to which this person belongs. Clearly, this is not necessarily equivalent to the actual welfare level of the migrant (or non-migrant).

5.3.2 Data and methodology – remittance flows

Unlike data on migration, data on remittances are typically not collected in population censuses. Thus, such data are normally obtained from household surveys. For this study's analysis of remittances, only the 1998/99 GLSS dataset is used; the 1991/92 GLSS data are not included due to the lack of information on multiple remittance outflows and receipts. The remittance data were collected at the household level, and to a large extent, are comprehensive, with information available on both remittance outflows and inflows. Moreover, data exist on multiple outflows and inflows, recipients

and remitters, and the relationships between the head of the sending/recipient household and each recipient/remitter.

It should be noted though that the GLSS remittance data do not address all issues that a specialised remittance survey might cover. This presumably stems from the all-purpose nature of the survey. Even though the survey's coverage of remittances consists of two sections (outflows and inflows), these do not pair remitters with recipients; in each section, a few questions were asked about the person at the other end of the transfer. The remittance outflow section, for instance, has some vital information about the recipient(s), namely, their gender, their relationship to the head of the sending household, and their place of residence. Nevertheless, a few more questions about the recipients would have been valuable. For example, questions about their age and employment category (or status) would have enriched the dataset by enabling a more in-depth analysis of remittance motivations. Furthermore, it would have been useful to have a question about the reason for sending the remittance, as well as information about contacts (such as visits) between the remitting household and the recipients.

With respect to the questionnaire's remittance receipt section, suggestions similar to those made for the remittance outflow section are applicable. Whereas the remittance receipt section asked questions about the remitter's gender, relationship to the head of the recipient household, and the locality of residence, additional questions about the remitter's age and employment category (or status) would have been highly informative. Additionally, it would have been illuminating to have a question about what the remittances were (or will be) used for. The fact that the dataset's remittance outflow and inflow sections do not pair remitters with recipients places some limitation on the extent to which remittances can be analysed. This is because it precludes a direct examination of both sides of remittance flows.

In spite of the above limitations, the usefulness of the data (on remittances) can hardly be overemphasised. Apart from it being nationally representative, the dataset is reasonably comprehensive, given that the survey is of the multi-topic type. Furthermore, the availability of information on multiple remitters and recipients is valuable, not to mention the availability of data on many other characteristics of sending and receiving

households. All in all, the GLSS4 remittance dataset is adequate for providing reasonable insight into remittance flows between Ghana's rural and urban sectors.

To what extent do the strengths and limitations of the remittance data inform the choice of methodology? It would be recalled that the relevant principal research question relates to the impact of remittances on the welfare of recipients. The implications of the data for our methodological approach are similar to the observations made in the case of migration. Owing to the likelihood of the presence of self-selection bias, coupled with the use of a single dataset, the preferred choice of methodology is selectivity-adjusted modelling. Thus, the broad methodological approach is identical to that of the migration analysis. As a result, only a brief summary is provided here, especially since details are outlined in chapter seven, where the remittance analysis is carried out.

In order to estimate the welfare impact of remittances on recipients' welfare, we first estimate selectivity-adjusted welfare equations for remittance recipients and non-recipients. These equations then serve as a basis for constructing counterfactual welfare levels, from which the average proportionate welfare gains – resulting from remittance receipts – are calculated. All these analyses are carried out separately for urban-to-rural remittance recipients[48] and rural-to-urban remittance recipients[49].

5.4 Conclusion

This chapter has addressed issues relating to the available data for tackling the study's main research questions, and their implications for the choice of methodology. To this end, we have outlined the main methodological options available in principle, and their data requirements. The nature of the data available for both the migration and remittance analyses has also been mentioned. Notably, because both migration and remittance flows are prone to self-selection bias, and consistency considerations rule out the use of multiple datasets, selectivity-adjusted modelling is employed in the analyses. Even though the GLSS4 dataset – being multi-topic in scope – does not provide all desirable information on migration and remittances, it is immensely useful and adequate

[48] That is, rural recipients of urban remittances.
[49] These are urban recipients of rural remittances.

for addressing the research questions. The stage is now set for our empirical analyses, starting with that of migration in the next chapter.

Chapter Six:
Impact of Inter-Sectoral Migration on Migrants' Welfare[50]

6.1 Introduction

In the previous chapter, it was evident that although migration is prevalent in Ghana, very few studies have rigorously examined its welfare impact. Whilst various factors might account for this void in the Ghana migration literature, it does appear that data limitations and modelling difficulties are some of the main reasons. The present chapter is an attempt to fill this research gap.

The main purpose of this chapter is to determine the impact of Ghana's inter-sectoral migration (that is, migration between urban and rural areas) on migrants' welfare. In pursuit of this, migration patterns and factors that influence migration decisions are also examined. The importance of this exercise stems from the fact that knowledge about the welfare impact of migration between rural and urban areas, and about factors influencing these population movements are vital for the formulation of appropriate rural and urban development policies. In the context of migration between rural and urban sectors, the chapter's main research questions are as follows:

i) What are the major influences on migration decisions?

ii) What is the impact of migration on migrants' welfare?

The chapter's analysis consists of the use of both descriptive statistics and econometric modelling.

The remainder of the chapter is organised as follows. The next section discusses issues relating to definitions. The third section discusses migration patterns and a profile of migrants in the periods 1991/92 and 1998/99. The modelling framework for the empirical analysis is outlined in the fourth section. In the fifth section, we carry out an empirical analysis of migration between Ghana's rural and urban sectors using data from the 1998/99 Ghana Living Standards Survey. Section six concludes the chapter.

[50] A paper based on this chapter was presented at the 2006 NEUDC (Northeast Universities Development Consortium) Conference at Cornell University. Comments received from participants are very much appreciated.

6.2 Definitions

At this point it is important to address the issue of the definition of a migrant as used in this empirical analysis. Given that this section's analysis is mainly based on GLSS4 data, it is instructive to identify some definitions proposed by the GLSS4 Report. The definitions – all relating to persons aged 15 years or more – are as follows (GSS 2000a):

In-migrant: a person born outside current place of residence;
Return migrant: a person born at current place of residence, but who had lived elsewhere for at least one year, and returned to place of birth;
Migrant: an in-migrant or a return migrant;
Non-migrant: a person born at current place of residence, and who has never lived elsewhere for a period lasting, at least, one year.

Whilst the above definitions seem appropriate, it is important to note that they do not capture the phenomenon of seasonal or, more generally, temporary migration. Consequently, there is a chance of classifying many seasonal and temporary migrants as non-migrants. This limitation of the definitions is, however, closely related to the data collected in the survey; the survey's data do not permit an examination of temporary migration. As a result, the migration-related definitions proposed in the present study similarly do not address this limitation. Future GLSS surveys could, therefore, be enhanced with the inclusion of questions that would generate information about temporary migration.

A second problem with the above definitions relates to the importance placed on birthplace. For example, the definition of an in-migrant can inappropriately classify certain persons as in-migrants, as might occur with persons who have always lived in a rural locality, but were born in a nearby town (possibly, the district capital). In Ghana (and presumably, in many other developing countries), it is not uncommon for expectant women to deliver their babies outside their localities of residence. This may occur in cases where rural residents deliver in nearby towns owing to inadequate health facilities in their own localities. An expectant woman may also deliver outside her residential locality simply because of a decision to be with her mother just before

delivery, ostensibly to facilitate the transfer of knowledge and skill in the nursing of babies. In the cited and similar instances, the nursing mother typically returns (with her child) to her usual place of residence, where the child may live permanently or until he or she becomes an adult. Furthermore, circumstances unrelated to child delivery may result in children moving (along with their parents or guardians) to some other locality and residing there permanently. Thus, a desirable feature of migrant-related definitions is an adjustment for dealing with problems posed by the strict linkage of migrant status to place of birth.

In the light of the preceding discussion, the following definitions are proposed:
In-migrant: a person born outside current place of residence, and who was at least 15 years old at the time of moving to current place;
Return migrant: a person born at current place of residence (or who moved to current place of residence before age 15) and who has lived elsewhere for more than one year and returned to current place when aged at least 15 years;
Non-migrant: an "adult" (aged at least 15 years) who is neither an in-migrant nor a return migrant.

6.3 Migration patterns and profile of migrants

The available data lend support to the prevalence of migration in Ghana, since a sizable proportion of the population are migrants or have migrated at some point in their lives. In 1991/92, 46.5 percent of Ghana's population were migrants (that is, either in-migrants or return-migrants) whereas the migrant share of the population in 1998/99 was 39.1 percent (see Table 16).

Table 16: Extent of migration in Ghana; 1991/92 and 1998/99

Migrant status	Share (%) of population (1991/92)	Share (%) of population (1998/99)
In-migrant	24.34	20.13
Return-migrant	22.15	18.92
Non-migrant	53.51	60.95
Total	100.00	100.00

Source: Author's computation using data from GLSS 3 and GLSS4.

In terms of origin-destination classification, the data suggest that Ghana's internal migration is dominated by rural-to-rural and urban-to-rural forms of population movement. For example, in 1991/92, 14.8 percent of Ghana's population were rural-to-rural migrants and 13.5 percent were urban-to-rural migrants, whereas urban-to-urban and rural-to-urban migrants constituted 10.5 percent and 3.9 percent, respectively (see Table 17). The pattern of internal migration in 1998/99 was not very different from that of 1991/92; urban-to-rural migrants accounted for 13.0 percent of the population, whilst rural-to-rural and urban-to-urban migrants represented 12.7 percent and 7.6 percent of the population, respectively. As reflected in Table 17, the rural-to-urban migrant share (3.1 percent) of the population was the lowest (that is, amongst internal migrants) in 1998/99. On the whole, and in both survey years, the migrant category with the lowest proportion of the population was foreign-to-urban migrants, followed by foreign-to-rural migrants. It is important to note, however, that in both 1991/92 and 1998/99, majority of persons migrating to Ghana from other countries were return migrants (see Table 26 and Table 27 in the Appendix to this chapter).

Table 17: Distribution of types of migrants in Ghana; 1991/92 and 1998/99

Migrant category	Proportion (%) of population; 1991/92[51]	Proportion (%) of population; 1998/99
Urban-to-urban	10.46	7.55
Urban-to-rural	13.49	13.01
Rural-to-urban	3.93	3.07
Rural-to-rural	14.75	12.72
Foreign-to-urban	1.63	0.98
Foreign-to-rural	1.99	1.72
Non-migrant	53.74	60.95
Total	100.00	100.00

Source: Author's computation using data from GLSS 3 and GLSS4.

The characteristics of migrants have been fairly similar between 1991/92 and 1998/99. With regard to the gender distribution, females had a higher share than males in each of the two survey years. In 1991/92, 53.7 percent of migrants were females, whilst the corresponding proportion in 1998/99 was 54.2 percent. It is worth noting that in 1991/92, even though female migrants outnumbered their male colleagues, the migration rate amongst males (46.7 percent) was not very different from the rate (46.4

[51] Information on migrants' previous place of residence was missing for 0.9% of migrants.

percent) amongst females (see Table 28 in the Appendix). The 1998/99 data also indicate similar migration rates for males (38.8 percent) and females (39.3 percent).

An examination of Table 18 shows that the majority of Ghana's migrants are less than forty-five years old, and that little change occurred in migrants' age distribution between 1991/92 and 1998/99. In each of the two survey years, migrants who were less than forty-five years old accounted for more than 55 percent of the migrant population. It must be stressed though, that whilst this age distribution is not surprising, it appears to be largely attributable to a generally large share of young people in the population. This point is informed by the even more pronounced domination of young people in the non-migrant population (see Table 18). In fact, amongst persons aged fifteen years or more, regardless of migration status, more than 80 percent are less than forty-five years old; this holds for both GLSS3 and GLSS4. It is also worth mentioning that the distribution of internal migrants is generally similar across the different age groups, except that in both survey years, rural-to-rural migration is particularly more prevalent amongst the elderly (see Table 34 and Table 35 in the Appendix).

Table 18: Age distribution of migrants and non-migrants; 1991/92 and 1998/99

Age group (in years)	Share (%) amongst migrants; 1991/92	Share (%) amongst migrants; 1998/99	Share (%) amongst non-migrants; 1991/92	Share (%) amongst non-migrants; 1998/99
$15 \leq age < 25$	11.97	9.77	49.59	49.96
$25 \leq age < 35$	25.27	23.04	20.49	18.57
$35 \leq age < 45$	23.69	26.14	11.22	13.99
$45 \leq age < 55$	18.76	20.44	8.19	8.29
$55 \leq age < 65$	11.03	10.42	4.72	4.43
$Age \geq 65$	9.29	10.19	5.78	4.76
Total	100.00	100.00	100.00	100.00

Source: Author's computation using data from GLSS 3 and GLSS4.

The main reasons for migrating – as indicated by migrants – were generally similar in the two surveys. In 1991/92, "other family reasons" was the response category that accounted for the largest share (37.9%) of reasons for migrating. This was followed by marriage, own employment, spouse's employment, "other", schooling, and drought/war in that order (see Table 30 in the Appendix to the present chapter). In 1998/99, "other

family reasons" was again the response category that accounted for the largest share (37.5%) of reasons for migrating. The second most cited reason in 1998/99 was own employment, with marriage, spouse's employment, "other", schooling, and drought/war following in that order (see Table 31 in the Appendix to the chapter). Given the importance of "other family reasons" in migration decisions, it would have been useful to know exactly what some of these family reasons are.

While broad similarities are evident in the cited reasons for migrating, it is important to highlight some gender-related differences. In 1991/92, "other family reasons" was the most stated reason for migrating given by men, while own employment was the second most dominant reason. Amongst females, however, the most cited reason was marriage, followed closely by "other family reasons". Given that in Ghana, it is women who normally migrate to join their husbands, it is not surprising that more than 30 percent of females – in each of the survey years – said they migrated mainly because of marriage; the corresponding percentage for men was less than 3 in each period. Furthermore, the data suggest that migrating as a result of a spouse's employment is more often undertaken by women. In both survey years, spouse's employment was the third most cited reason amongst females, whereas for males, it was the fourth most mentioned reason.

In order to obtain a rough measure of living standards across migrant status, we examine – for both rural and urban sectors – the mean consumption welfare for in-migrants, return-migrants, and non-migrants. To this end, we define an individual's consumption welfare as the total consumption expenditure per adult equivalent of that individual's household, measured in real terms. In 1991/92, return migrants had the highest mean consumption welfare, followed by in-migrants and non-migrants, in that order. In 1998/99, in-migrants had the highest mean consumption welfare, but no clear pattern emerged in the ranking between return migrants and non-migrants (see Table 32 and Table 33 in the Appendix).

A comparison of the mean consumption welfare of internal migrants indicates that urban-to-urban migrants had the highest welfare in each of the two survey years, with rural-to-urban, urban-to-rural, and rural-to-rural migrants following in that order (see Table 19). Furthermore, in both 1991/92 and 1998/99, urban non-migrants had, on

average, a higher level of consumption welfare than urban-to-rural in-migrants, whilst rural non-migrants had a lower level of consumption welfare than rural-to-urban in-migrants. These results lend themselves to various reasonable explanations. It is plausible, that for urban areas, it is those with lower welfare who often migrate to the rural localities, whereas amongst rural dwellers, it is the relatively better-off who usually manage to migrate to the urban sector. The results might also be reflecting the general welfare disparities between urban and rural sectors. Additionally, these findings could be hinting at a tendency for rural-to-urban migration to be more rewarding than urban-to-rural migration. The empirical analysis of migration's impact on migrants' welfare will shed more light on these issues.

Table 19: Mean consumption welfare of internal migrants (in '000 cedis); 1991/92 and 1998/99

Migrant category	1991/92	1998/99
Urban-to-urban	1,848.1	1,941.2
Urban-to-rural	1,113.5	1,234.6
Rural-to-urban	1,616.3	1,636.2
Rural-to-rural	1,034.3	1,067.8

Source: Author's computation using data from GLSS 3 and GLSS4.

6.4 Modelling of migration's impact on migrants' welfare

The previous section's discussion provided some insight into the extent and pattern of migration, as well as information about consumption welfare across categories of migrants. However, as noted in the introduction to the present chapter, it is useful to know the welfare impact of migration. In this section, we outline a general model for estimating the impact of migration on migrants' welfare; a general model suffices because only a slight modification is required to extend the analysis to the specific cases of rural-to-urban migration and urban-to-rural migration. The basic modelling strategy follows very closely Lee (1978) and Nakosteen and Zimmer (1980), and is summarised as follows:

1. A simultaneous estimation of the following three equations:
    a) A migration decision equation, defined over both migrants and non-migrants;
    b) A welfare equation for migrants; and

c) A welfare equation for non-migrants.

2. The use of the two welfare equations – and data on both migrants and non-migrants – to estimate the average impact of migration on migrants' welfare.

6.4.1 Theoretical framework

Sjaastad's (1962) human capital framework constitutes the theoretical underpinning for the model employed. By viewing migration as an investment in human capital, Sjaastad suggests that prospective migrants aim to maximise the present value of the net gains resulting from locational change. For any potential migrant, suppose the present value of the migration generated net gain is given by:

$$PV_m(t) = \int_0^T [W_{mt} - W_{nt}]e^{-pt}\,dt - C_m \qquad (1)$$

where

W_{mt} represents anticipated welfare at the m^{th} prospective destination locality at time t;

W_{nt} represents anticipated welfare at origin locality at time t;

C_m denotes a one-time cost[52] of migrating to locality m;

T: duration of migration status;

p: implicit discount rate.

The individual does not migrate if $PV_m \leq 0$ for all m;

The individual migrates, if there exists an m for which $PV_m > 0$, and where this condition is satisfied by more than one prospective destination, the individual selects the destination yielding the maximum PV_m.

In order to adapt the above theoretical framework for empirical analyses, we (following Nakosteen and Zimmer, 1980) make the following assumption:

[52] Even though costs associated with migration are not incurred once, recurring costs of locational change are subsumed in the welfare measure.

At any given time, individual i will choose to migrate if the anticipated welfare gain exceeds the corresponding migration costs.

This implies that at any given time, an individual will migrate if his/her proportionate welfare gain exceeds the migration costs, as a proportion of welfare. Thus, denoting the individual's migration costs (as a proportion of welfare) by Q_i, individual i will migrate if:

$$[(W_{mi} - W_{ni})/W_{ni}] - Q_i > 0, \quad (2)$$

and will not migrate if:

$$[(W_{mi} - W_{ni})/W_{ni}] - Q_i \leq 0, \quad (3)$$

where

W_{mi} denotes individual i's welfare as a migrant; and

W_{ni} denotes individual i's welfare as a non-migrant.

It may be argued that the costs of migration depend on individual attributes (for example, age, sex, and marital status) and community-level characteristics, such as the cost of living and the unemployment rate. Thus, the decision regarding whether to migrate – as indicated in inequalities (2) and (3) – may be expressed as a function of (anticipated) welfare gains, individual attributes, and community (origin or destination) characteristics. In the tradition of similar methodologies (see, for example, Lee 1978 and Nakosteen and Zimmer 1980), we adopt a linear functional form for the migration decision equation as follows:

Individual i migrates if:

$$I_i^* = \alpha_0 + \alpha_1[(W_{mi} - W_{ni})/W_{ni}] + \boldsymbol{\alpha}.\mathbf{G_i} - \varepsilon_i > 0, \quad (4)$$

and does not migrate if

$$I_i^* = \alpha_0 + \alpha_1[(W_{mi} - W_{ni})/W_{ni}] + \boldsymbol{\alpha}.\mathbf{G_i} - \varepsilon_i \leq 0, \quad (5)$$

where

α_1: Coefficient of the welfare gain variable

$\mathbf{G_i}$: Vector of variables representing appropriate individual and community characteristics

$\boldsymbol{\alpha}$: Vector of coefficients of the variables in $\mathbf{G_i}$:

ε_i: An error term; and

α_0: A constant term

It is also reasonable to postulate that an individual's welfare level depends on personal characteristics (such as educational attainment) and community attributes (for example, the availability of socio-economic amenities). An individual's welfare equation can consequently be expressed as a function of variables representing individual and community characteristics. Invoking the argument of Lee (1978) that (LnW_{mi} - LnW_{ni}) and (W_{mi} - W_{ni})/W_{ni} are approximately equal, the empirical model is specified below, with the welfare equations formulated in logarithmic form:

$$I_i^* = \alpha_0 + \alpha_1(LnW_{mi} - LnW_{ni}) + \boldsymbol{\alpha}.\boldsymbol{G_i} - \varepsilon_i$$

$$LnW_{mi} = a_m + \boldsymbol{\beta_m}.\boldsymbol{X_i} + \varepsilon_{mi}$$

$$LnW_{ni} = a_n + \boldsymbol{\beta_n}.\boldsymbol{X_i} + \varepsilon_{ni}$$

where

I_i^* is not observed, but we rather observe

$I_i = 1$ if $I_i^* > 0$, and $I_i = 0$ if $I_i^* \leq 0$;

LnW_{mi}: log of migrant welfare

LnW_{ni}: log of non-migrant welfare

$\boldsymbol{X_i}$: Vector of variables representing relevant individual and community characteristics

$\boldsymbol{\beta_m}$: Migrant vector of coefficients of the variables in $\boldsymbol{X_i}$

$\boldsymbol{\beta_n}$: Non-migrant vector of coefficients of the variables in $\boldsymbol{X_i}$

ε_i, ε_{mi}, and ε_{ni} are all Normally distributed error terms with zero mean and constant variance;

All other variables retain their definitions.

The observed variables in the model are the limited dependent variables, W_{mi} and W_{ni}, the dichotomous migration decision variable I_i, and the variables contained in vectors $\boldsymbol{G_i}$, and $\boldsymbol{X_i}$. In general, the Ordinary Least Squares (OLS) technique is inappropriate for estimating the welfare equations due to its failure to account for selectivity bias (see Nakosteen and Zimmer, 1980; and Lee, 1978). As a result, we employ Lee's (1978)

proposed solution[53]; the welfare equations are modified by incorporating appropriate "selectivity variables", and adding error terms with zero means. It is worth emphasising that even though the variables contained in $\boldsymbol{G_i}$ and $\boldsymbol{X_i}$ represent individual and community characteristics, the two vectors need not contain identical variables.

6.4.2 Estimation procedure

In order to estimate all the parameters of the model, the following estimation technique is used:

i. Probit estimation of the reduced-form migration decision equation

The regressors in this equation consist of the exogenous variables in all the three structural equations. Fitted values ($\hat{\psi}_i$) obtained from this (first) stage are used to construct variables u_{1i} and u_{2i}, where:

$u_{1i} = f(\hat{\psi}_i) / F(\hat{\psi}_i)$ is the selectivity variable for the migrant welfare equation;

$u_{2i} = f(\hat{\psi}_i) / [1 - F(\hat{\psi}_i)]$ is the selectivity variable for the non-migrant welfare equation;

f: the density function of a standard normal random variable; and

F: the cumulative distribution function of a standard normal random variable.

ii. Insertion of u_{1i} and u_{2i} into the appropriate welfare equations and estimating the welfare equations by OLS

Estimates obtained using the above two-step procedure are known to be consistent (see Lee, 1978).

iii. Probit estimation of the structural migration decision equation

In this step, the consistent parameter estimates of the welfare equations are used to obtain fitted values of the logarithm of welfare, which are in turn, used to compute estimates of ($LnW_{mi} - LnW_{ni}$). Together with other exogenous variables, the estimates of ($LnW_{mi} - LnW_{ni}$) are inserted into the structural decision equation to obtain the probit estimates of the structural migration decision equation.

[53] As noted earlier, this technique is often referred to as the Heckman two-step method.

6.4.3 Determination of migration's impact on migrants' welfare

In order to estimate migration's impact on migrants' welfare, we employ simulations of counterfactual scenarios, coupled with the estimation of an index of welfare gain due to migration. This is accomplished by computing an index of the welfare differential between migration and non-migration scenarios as follows:

For any sub-group (δ)[54] of the entire sample, let $N(\delta)$ be the corresponding population size;
Then, for any sub-group (δ), the average proportionate welfare increment attributable to migration may be expressed as:

$$g = \frac{1}{N(\delta)} \sum_{i \in \delta} \frac{Wmi - Wni}{Wni}$$

Where, *Wmi* and *Wni* – individual *i*'s welfare levels[55] as a migrant and as a non-migrant, respectively – are proxied by their corresponding fitted values.

6.5 Empirical analysis

6.5.1 Introductory note and discussion of variables

In applying the described model to an analysis of migration between Ghana's rural and urban sectors, a number of adjustments are made. These adjustments stem from an explicit recognition of two separate migratory movements, namely, urban-to-rural migration and rural-to-urban migration. Two separate analyses are consequently carried out, one for each migratory movement. It should be noted also, that a *migrant* – as used in the outlined analytical model – is equivalent to an *in-migrant* as defined earlier; thus,

[54] Examples of a sub-group are (i) migrants and (ii) migrants and non-migrants.
[55] Although the proportionate change in welfare could have been approximated by the difference in log welfare, we follow Lee (1978) in deriving the welfare levels from log welfare via the relation $x = e^{\log x}$. Thus, for example, $Wmi = e^{\log Wmi}$.

return migrants are excluded[56]. Furthermore, we employ a consumption measure of welfare for which an individual's consumption welfare is defined as the total real consumption expenditure per adult equivalent of that individual's household. It should be noted that this welfare measure – contained in the GLSS dataset – was computed on the basis of an equivalence scale commonly used in nutritional studies in Ghana (GSS 2000c).

In addition to the above adjustments, the econometric analysis has been carried out with the household head as the unit of observation. This has been done in order to circumvent the problem posed by a feature of the dataset; where two or more migrants belong to the same household, they will have the same welfare level even though the values of their explanatory variables will almost certainly vary. This characteristic of the dataset will normally render the estimation of the welfare function inappropriate if the estimation is done over the sample of migrants, including those belonging to the same household.

For the analysis of urban-to-rural migration, the three structural equations consist of a migration decision equation (defined over a pooled sample of urban non-migrants and urban-to-rural in-migrants), a welfare equation for urban-to-rural in-migrants, and a welfare equation for urban non-migrants. Similarly, in analysing rural-to-urban migration, the relevant structural equations comprise a migration decision equation (defined over a pooled sample of rural non-migrants and rural-to-urban in-migrants), a welfare equation for rural-to-urban in-migrants, and a welfare equation for rural non-migrants.

The entire data contained 14,196 observations on persons aged 15 years or more. The set of regressors for each of the two migration status equations includes variables for highest educational attainment, age group, marital status[57], ethnicity, and (anticipated) welfare gain. The choice of these variables is informed by theory, the literature, and a preliminary analysis that explored various combinations of regressors. In particular, in order to ensure that the parameters of the structural (migration) decision equation are

[56] As an ancillary analysis, the impact of migration on the welfare of return migrants is considered later in the chapter.
[57] Here, what is used is a variable that places emphasis on whether (or not) a person has always been single.

identified, the welfare equations must contain at least one exogenous variable that is excluded from the structural migration equation (Nakosteen and Zimmer, 1980). As a result, in both the urban-to-rural and rural-to-urban models, household size is included as a regressor in the welfare equations, but excluded from the migration decision equation. It is worth noting also that the set of regressors for the urban-to-rural and rural-to-urban models are not identical. This is because the coefficients of some regressors were significant in one model, but insignificant in the other.

On a priori grounds, we expect education to have a positive impact on rural-to-urban migration, and to have a negative effect on urban-to-rural migration. With regard to age, the literature suggests that young adults tend to have a higher propensity to migrate than the elderly. It is therefore expected that the tendency to migrate amongst lower age groups will be higher than that of higher age groups. The impact (on migration) of anticipated welfare gain is expected to be positive; an expectation rooted in both theoretical and intuitive considerations. Finally, apart from serving as control variables, the ethnicity variables can provide further insights into population movements between Ghana's rural and urban localities.

Theory and preliminary data examination were again crucial in the selection of regressors for the welfare equations. Most of the regressors were common to all four welfare equations. These common regressors include highest educational attainment, selectivity, and location, as well as variables that capture household characteristics, such as size, access to pipe-borne water for drinking, and the use of electricity for lighting. It is worth noting that since some regressors in welfare equations can often be endogenous, it is important to address this issue satisfactorily. One major approach adopted in dealing with this concern is the replacement of variables that are likely to be endogenous with respect to migration. Thus, for example, when estimating counterfactual non-migrant welfare levels for in-migrants, the Regional, employment, and other dummies were replaced with their actual pre-migration values where available. For variables for which pre-migration values are unavailable, these were predicted using probit regression estimates for the sample of non-migrants[58]. Table 20 shows a list of variables used in the analysis, together with their mean and standard

[58] These probit regressions – about twenty in all – are available upon request.

deviation.

Table 20: List of variables for the econometric analysis

Variable	Description	Number of observations	Mean	Standard deviation
lnW	Log of welfare	14,196	13.93	0.71
sex1	Male	14,196	0.46	0.50
sex2	Female	14,196	0.54	0.50
Hhsize	Household size	14,196	5.53	2.87
n15	# of children (<15 yrs)	14,196	2.22	1.82
n65	# of elderly (>65 yrs)	14,196	0.22	0.48
hiedq1	No educational qualification	14,196	0.58	0.49
hiedq2	MSLC/BECE	14,196	0.31	0.46
hiedq3	Voc., comm.., O/A level	14,196	0.07	0.26
hiedq4	TT/nursing/tech/prof.	14,196	0.03	0.17
hiedq5	Degree holder	14,196	0.00	0.05
hiedq6	Unspec. educ	14,196	0.00	0.05
empcat1	empcat== 1.0000	14,196	0.23	0.42
empcat2	Empl in agric.	14,196	0.43	0.50
empcat3	Empl in industry	14,196	0.08	0.27
empcat4	Empl in services	14,196	0.22	0.42
empcat5	Empl in other	14,196	0.03	0.17
farmliv1	HH - farm-related activity	14,196	0.71	0.45
foodpr1	HH - food processing	14,196	0.67	0.47
othbus1	HH - other business	14,196	0.50	0.50
pbw1	Pipe-borne water	14,196	0.40	0.49
eg1	Electricity/generator	14,196	0.39	0.49
ez2	Forest zone	14,196	0.45	0.50
ez3	Savannah zone	14,196	0.23	0.42
agegp1	15≤age<25	14,196	0.30	0.46
agegp2	25≤age<35	14,196	0.22	0.41
agegp3	35≤age<45	14,196	0.18	0.38
agegp4	45≤age<55	14,196	0.13	0.34
agegp5	55≤age<65	14,196	0.08	0.27
agegp6	Age ≥ 65	14,196	0.09	0.29
mar1	Married	14,196	0.44	0.50
mar2	Informal union	14,196	0.11	0.31
mar3	Divorced/separated	14,196	0.08	0.27
mar4	Widowed	14,196	0.07	0.25
mar5	Never married	14,196	0.31	0.46
ez1	Coastal zone	14,196	0.32	0.47
ez2	Forest zone	14,196	0.45	0.50
ez3	Savannah zone	14,196	0.23	0.42
reg1	Western	14,196	0.11	0.31
reg2	Central	14,196	0.10	0.30
reg3	Greater Accra	14,196	0.13	0.33
reg4	Eastern	14,196	0.13	0.33
reg5	Volta	14,196	0.14	0.35
reg6	Ashanti	14,196	0.18	0.38
reg7	Brong-Ahafo	14,196	0.08	0.26
reg8	Northern	14,196	0.07	0.26
reg9	Upper West	14,196	0.03	0.16
reg10	Upper East	14,196	0.05	0.21

It should be noted also that owing to the fact that the selectivity variable is non-linear, the selectivity-adjusted welfare regressions are, in principle, identified even if the set of regressors for the first-step probit is identical to that of the welfare regressions (see Dolton, 2007; and Puhani, 2000). Dolton has observed, however, that in order to facilitate the identification of the outcome (OLS) equation, it is desirable to have at least one regressor in the first-step probit excluded from the outcome regression. This excluded variable is often referred to as the identifying variable or the exclusion restriction.

It is usually difficult to find an appropriate exclusion restriction, since variable(s) that may influence participation often also affects outcome. Moreover, tests of the validity of exclusion restrictions are uncommon in the literature. In this chapter and the next, we provide tests of the validity of the exclusion restrictions employed in the selectivity-adjusted welfare regressions; those for the migration analysis are in the appendix to the present chapter and those for the remittance analysis can be found in the appendix to chapter seven. These tests – following Dolton (2007) – are based on the logic that an exclusion restriction (or identifying variable) is valid if its coefficient is significant when included in the probit, but insignificant when included in the selectivity-adjusted OLS regression.

Additionally, since the methodology adopted involves estimating separate equations for migrants and non-migrants, Wald-type tests were performed to ascertain whether the coefficients of the regressors differ across the migrant and non-migrant samples. Clearly, it might be unnecessary to split the sample if there were evidence to suggest that the coefficients are the same across the split samples. The results of the test (see Table 36 and Table 37) fail to provide evidence that the two sets of coefficients are equal, thus strengthening the justification for the methodology employed. It is worth mentioning that similar tests are performed for the remittance analysis (see Table 61 and Table 62 in the appendix to chapter seven).

6.5.2 Factors influencing urban-to-rural migration

In Table 21, results from the following three regressions are displayed[59], with the highlighted variable (the gender dummy) representing the exclusion restriction:

welf1: *OLS welfare regression for household heads who are urban-to-rural in-migrants, where the dependent variable is the natural logarithm of welfare;*

welf0*: OLS welfare regression for urban non-migrant household heads, where the dependent variable is the natural logarithm of welfare; and*

Probit*: Probit estimation of the structural migration decision equation, using the pooled sample of urban non-migrant household heads and urban-to-rural in-migrants who are household heads, where the dependent variable is a dummy that takes the value 1 for an in-migrant and 0 for a non-migrant.*

The results of the analysis generally conform to a priori expectations. The positive and significant coefficient of the *anticipated welfare gain* variable suggests that this factor is a major influence on Ghana's urban-to-rural migration decisions. The results further suggest that in comparison with their elderly (at least 65 years old) colleagues, urban adults who are less than 35 years old are less likely to migrate to rural areas. Given that rural life hardly appeals to Ghana's urban young adults, this finding is not surprising.

We also find evidence consistent with the view that in comparison with their female colleagues, males urban residents are more likely to migrate to rural localities, all else being equal. In view of the high statistical significance (p-value is 0.007) of the coefficient of the gender dummy, it is reasonable to conclude that gender is a strong factor in Ghana's urban-to-rural migration decisions.

Our findings do not show a strong influence of education in urban-to-rural migration decisions. There is, nevertheless, some indication that relative to having no education, an educational attainment to the MSLC/BECE level could increase the probability of

[59] The results from the first-step probit regression can be found in the appendix (see Table 38).

migrating from an urban area to the rural sector. None of the other educational dummies had statistically significant coefficients.

The performance of the ethnicity dummies provides additional insights into Ghana's urban-to-rural migration. The results suggest that ethnicity plays an influential role in urban-to-rural migration decisions. For instance, the findings suggest that relative to urban residents of Northern extraction, Asantes living in urban areas are more likely to migrate to rural areas, all other things being equal. The same holds for Fantis, other Akans, and Ga-Adangbes. Given the lack of a clear explanation for this finding, further research on this issue will be instructive.

6.5.3 Factors influencing the consumption levels of urban non-migrants and urban-to-rural in-migrants

As noted earlier, an exclusion restriction was imposed in order to facilitate the identification of the welfare equation. Apart from the fact that the selection of the gender dummy as the exclusion restriction is supported by the test of its validity (see Table 43), such a choice makes practical sense. This is because while the importance of gender in migration decisions has been generally acknowledged, it is plausible to expect that a migrant's gender will have little influence on the average household welfare since the gender of other household members might be equally important in determining household welfare.

With regard to the consumption welfare of urban-to-rural in-migrants, there is strong support for a negative effect of household size on welfare. The results show a strong negative association between household size and the welfare of urban-to-rural in-migrants. Additionally, strong support is found – amongst both urban-to-rural in-migrants and urban non-migrants – for a welfare-enhancing role of education. In both welfare equations, virtually all the education dummies have significantly positive effects on welfare.

The results further suggest that having electricity (or a generator) for lighting enhances the welfare of urban non-migrants. This finding is tenable, given the health hazards

associated with some other forms of lighting. Similarly, access to pipe-borne water for drinking is strongly associated with improved living standards of urban non-migrants, a finding that is expected. It is worth mentioning that virtually none of the locational variables had their coefficient being statistically significant.

Another notable finding relates to self-selectivity. For the urban-to-rural welfare equation, the coefficient of the selectivity variable is statistically significant and positive. This provides support for the positive selectivity of urban-to-rural in-migrants; urban-to-rural in-migrants fared better than urban non-migrants would have fared if they had migrated. Furthermore, the statistical significance of the coefficient of the selectivity variable provides justification for the use of a methodology that corrects for selectivity-bias. Other results relating to urban non-migrants are worth noting; ceteris paribus, individuals whose households are engaged in an agricultural enterprise are likely to have lower levels of welfare relative to those whose households are not engaged in these activities. On the other hand, the results suggest that an urban non-migrant's welfare tends to be enhanced by the household's ownership of some other business.

Table 21: Urban-to-rural migration model

Dependent variables:
probit: dummy (1 if urban-to-rural in-migrant, 0 if urban non-migrant)
welf1 and welf0: Natural logarithm of household consumption expenditure per adult equivalent

	(1) welf1		(2) welf0		(3) probit	
Household size	-0.12***	(0.01)	-0.11***	(0.01)		
Longer-term migrant dummy	0.14	(0.08)				
Log mean age of adults	-0.14	(0.11)	0.04	(0.06)		
MSLC/BECE	0.16**	(0.07)	0.07	(0.04)	0.33*	(0.17)
Voc., comm., O/A level	0.40***	(0.12)	0.30***	(0.05)	0.03	(0.28)
TT/nursing/tech/prof.	0.52***	(0.12)	0.32***	(0.07)	0.06	(0.24)
Degree holder	1.29***	(0.36)	0.34	(0.27)		
Unspecified education	0.25	(0.47)	0.43	(0.27)		
No educ qualification (omitted category)						
Farm/livestock	0.08	(0.10)	-0.10*	(0.05)		
Food processing	0.03	(0.08)	-0.02	(0.04)		
Other business	0.01	(0.06)	0.14***	(0.03)		
Pipe-borne water	-0.09	(0.13)	0.16**	(0.08)		
Electricity/generator	0.16	(0.11)	0.31***	(0.06)		
Western	0.65	(0.50)	0.03	(0.22)		
Central	0.57	(0.49)	-0.39*	(0.22)		
Greater Accra	0.71	(0.49)	0.09	(0.21)		
Eastern	0.22	(0.48)	-0.14	(0.21)		
Volta	0.52	(0.49)	-0.15	(0.22)		
Ashanti	0.67	(0.49)	0.17	(0.21)		
Brong-Ahafo	0.51	(0.48)	0.00	(0.21)		
Northern	0.21	(0.52)	-0.12	(0.20)		
Upper West	-0.28	(0.61)	-0.17	(0.23)		
Upper East (omitted category)						
Selectivity	0.33**	(0.15)	-0.07	(0.12)		
Male					**0.44*** **	**(0.16)**
Age:[15, 25)					-0.65*	(0.39)
Age:[25, 35)					-0.47*	(0.25)

Table 21: Continued …

	(1) welf1		(2) welf0		(3) probit	
Age:[35, 45)					0.15	(0.23)
Age:[45, 55)					0.13	(0.23)
Age:[55, 65)					0.14	(0.24)
Age≥65 (omitted category)						
Asante					1.76***	(0.24)
Fanti					0.65**	(0.26)
Other Akan					0.58***	(0.22)
Ga-Adangbe					0.62*	(0.37)
Ewe					0.18	(0.24)
Other tribe					1.41***	(0.29)
Northern tribes (omitted category)						
Never married					0.03	(0.29)
Anticipated welfare gain					4.59***	(0.28)
Constant	14.01***	(0.67)	14.20***	(0.29)	0.88***	(0.30)
N	403.00		1044.00		1372.00	
r2	0.42		0.45			
r2_a	0.39		0.44			
F	12.01		38.59			
r2_p					0.70	
chi2					1066.46	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

6.5.4 Welfare-gain from urban-to-rural migration

The average proportionate welfare gap between in-migrant and non-migrant scenarios is very informative. On the whole, migration had a negative impact on the welfare of urban-to-rural in-migrants as they incurred (on average) a 9.3 percentage welfare loss (see Table 22). Further examination shows that 32.6 percent of urban-to-rural in-migrants gained from migrating, their average proportionate gain being 26.5 percent. These findings suggest that although urban-to-rural migration is generally not beneficial to the migrants, some migrants do gain.

A similar simulation for urban non-migrants shows that if they had migrated to the rural sector, they would have incurred a 60.7 percentage welfare loss on average. As shown in Table 22, migrating to the rural sector would have left almost all (99.9 percent) of the urban non-migrants un-rewarded. Whilst the findings summarised in Table 22 are not a direct test for selectivity bias, they lend support to the notion that migrants – and non-migrants – are often non-randomly selected from the population. Migrants tend to be those who have a better chance (compared with non-migrants) of gaining from migration. In order to provide an idea of how robust these results might be, the results corresponding to an alternative model specification[60] are shown in Table 41 in the Appendix.

Table 22: Migration-generated welfare gains; urban-to-rural migration (selectivity bias adjusted)

	Number of persons	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Urban-to-rural in-migrants	337	-9.31	32.64 (Mean % gain = 26.52)	67.36 (Mean % loss = 26.67)
Urban non-migrants	1,036	-60.70	0.10 (Mean % gain = 2.28)	99.90 (Mean % loss = 60.76)

[60] In this alternative specification, the welfare regression includes "# of children" and "# of elderly" as regressors.

6.5.5 Factors influencing rural-to-urban migration

The findings provide strong support for the importance of anticipated welfare gains in migration decisions (see Table 23). The results further point to an absence of a strong influence of age in rural-to-urban migration decisions. Nevertheless, the probit estimates suggest, that in comparison with the elderly, rural household heads who are aged between 35 and 45 years are more likely to be rural-to-urban in-migrants. Given that more than 60 percent of rural-to-urban in-migrants have lived at their current location for at least ten years, these results are consistent with the view that young adults are more likely to engage in rural-to-urban migration, i.e., in comparison with the elderly.

In comparison with rural residents whose educational attainment is either lower than MSLC/BECE[61] or unspecified, rural dwellers with the highest educational attainment being vocational, commercial, "O", or "A" level, are less likely to migrate to the urban sector. The underlying reason for this particular finding is, however, unclear. The coefficients of the other educational dummies were not statistically significant.

The migration analysis further reflects the view that ethnicity might have some influence on migration decisions. The statistically significant and positive coefficient of "Asante" suggests that all other things being equal, being an Asante increases the probability of rural-to-urban migration. Our results further show that compared to rural dwellers whose ethnicity is "Northern", "Other Akan" rural dwellers are more prone to migrating to urban centres. It is worth mentioning that the statistical significance of the coefficient of "Other Akan" is particularly high. Since there is no strong reason to expect ethnicity to influence welfare, "Other Akan" has been used as the exclusion restriction for our selectivity-adjusted welfare regressions, and the test of its validity as an exclusion restriction is provided in Table 44 in the Appendix.

It is worth noting that the absence of the gender dummy in the structural probit for rural-to-urban migration stems from the fact that the coefficient of the variable was insignificant in a preliminary estimation of the model. Considering that the gender

[61] MSLC is the Middle School Leaving Certificate (no longer awarded), and the BECE is the Basic Education Certificate Examination. Each of these represents the highest qualification at the basic education level.

dummy's coefficient is significant in the urban-to-rural structural probit (see Table 21), this finding is interesting. Whereas, all other things being equal, males are more likely to migrate from urban to rural areas, rural-to-urban migration appears to be unaffected by gender. Although this result looks surprising, it is plausible if more wives tend to accompany their rural-to-urban migrating husbands than occurs with urban-to-rural migration.

6.5.6 Factors influencing the consumption levels of rural non-migrants and rural-to-urban in-migrants

One of our robust results is the strong support established for a negative relationship between welfare and household size. All other things being equal, rural-to-urban in-migrants whose households drink pipe-borne water enjoy a higher level of welfare, relative to their counterparts lacking this amenity. Furthermore, the living standards of rural-to-urban in-migrants are enhanced by the use of electricity (or a generator) for lighting. It should be noted, however, that the relationship between welfare and access to pipe-borne water or to electricity/generator should be treated as an association, since the regressors can hardly be considered strictly exogenous.

The welfare equations for both rural non-migrants and rural-to-urban in-migrants further provide some support for the existence of a positive link between education and welfare. This positive association conforms to a priori expectations, and highlights the need to attach immense importance to education in national development policies. It is worth mentioning, though, that improvements in the educational level of all citizens may not necessarily enhance the welfare of everyone, owing to the fallacy of composition.

Estimates of the rural-to-urban model are shown in Table 23 as follows:

welf1: *OLS welfare regression for household heads who are rural-to-urban in-migrants, where the dependent variable is the natural logarithm of welfare;*

welf0: *OLS welfare regression for household heads who are rural non-migrants, where the dependent variable is the natural logarithm of welfare; and*

probit: *Probit estimation of the structural migration decision equation, using the combined sample of rural non-migrant household heads and rural-to-urban in-migrants who are household heads; the dependent variable is a dummy which assumes the value 1 for an in-migrant and 0 for a non-migrant.*

Table 23: Rural-to-urban migration model

Dependent variables:

probit: dummy (1 if rural-to-urban in-migrant, 0 if rural non-migrant)

welf1 and welf0: Natural logarithm of household consumption expenditure per adult equivalent

	(1) welf1		(2) welf0		(3) probit	
Household size	-0.11***	(0.01)	-0.12***	(0.01)		
Longer-term migrant dummy	-0.14	(0.12)				
Log mean age of adults	0.09	(0.15)	-0.06	(0.05)		
MSLC/BECE	0.11	(0.09)	0.05	(0.03)	-0.15	(0.14)
Voc., comm., O/A level	0.36***	(0.13)	0.00	(0.08)	-0.61**	(0.27)
TT/nursing/tech/prof.	0.45***	(0.13)	0.25**	(0.11)	0.15	(0.27)
Degree holder	-0.09	(0.48)	0.82**	(0.39)		
No educ qualification (omitted category)						
Empl in agric.	-0.18	(0.16)	0.22***	(0.08)		
Empl in industry	0.12	(0.14)	0.17*	(0.09)		
Empl in services	0.12	(0.13)	0.25***	(0.08)		
Empl in other	0.00	(0.00)	0.00	(0.00)		
Unemployed (omitted category)						
Other business	0.05	(0.07)	0.13***	(0.03)		
Pipe-borne water	0.43***	(0.14)	0.05	(0.05)		
Electricity/generator	0.48***	(0.11)	0.07	(0.05)		
Western	0.36*	(0.21)	0.90***	(0.07)		
Central	-0.54*	(0.29)	0.67***	(0.07)		
Greater Accra	0.34*	(0.19)	0.93***	(0.11)		
Eastern	0.09	(0.20)	0.65***	(0.07)		
Volta	-0.14	(0.19)	0.73***	(0.07)		
Ashanti	0.50***	(0.19)	0.89***	(0.07)		
Brong-Ahafo	0.32	(0.21)	0.72***	(0.07)		
Northern	0.00	(0.00)	0.42***	(0.07)		
Upper West	0.00	(0.00)	0.00	(0.00)		
Upper East (omitted category)						
Selectivity	0.20*	(0.12)	0.23	(0.14)		

Table 23: Continued …

	(1) welf1		(2) welf0		(3) probit	
Age:[15, 25)					-0.13	(0.48)
Age:[25, 35)					0.04	(0.21)
Age:[35, 45)					0.44**	(0.20)
Age:[45, 55)					0.29	(0.19)
Age:[55, 65)					0.10	(0.20)
Age≥65 (omitted category)						
Asante					0.40*	(0.23)
Fanti					0.18	(0.22)
Other Akan					**0.59*** **	**(0.20)**
Ewe					0.29	(0.20)
Other tribe					-0.01	(0.22)
Northern tribes (omitted category)						
Never married					-0.06	(0.30)
Anticipated welfare gain					2.83***	(0.18)
Constant	13.30***	(0.59)	13.59***	(0.23)	-2.09***	(0.21)
N	168.00		1480.00		1619.00	
r2	0.66		0.38			
r2_a	0.62		0.37			
F	13.72		42.74			
r2_p					0.44	
chi2					452.94	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

Amongst rural-to-urban in-migrants, the specific sector of one's employment (i.e., after migrating) exerts no significant impact on welfare. In the case of rural non-migrants, however, our estimates suggest that being employed in any of the agricultural, industrial, or services sectors – that is, relative to being jobless – tends to enhance welfare, with employment in agriculture or services being particularly influential. Additionally, rural non-migrants whose households are engaged in business enterprises (other than agricultural or food processing ventures) have higher welfare levels compared with those whose households do not engage in such activities.

It can be observed that the coefficient of the selectivity variable is positive and significant, lending credence to the view that rural-to-urban in-migrants are positively selected. Thus, compared to rural non-migrants, rural-to-urban in-migrants are likely to be those who have a better chance of gaining from migrating to urban centres. This point is buttressed by the analysis of welfare-gains from rural-to-urban migration, the next sub-section's subject of discussion.

6.5.7 Welfare-gain from rural-to-urban migration

On the basis of our results, rural-to-urban migration is generally very rewarding for the in-migrants. By migrating to urban localities, rural-to-urban in-migrants reaped a proportionate welfare gain of 97.9 percent on average (see Table 24). In this connection, it would be recalled that for the urban-to-rural migration scenario, the in-migrants incurred a mean welfare loss (see Table 22). Table 24 further shows that the majority (88.4 percent) of rural-to-urban in-migrants gained by migrating, the mean proportionate welfare-gain of the gainers being 113.7 percent. For the minority (11.6 percent) of rural-to-urban in-migrants who did not gain, the mean proportionate welfare-loss was 22.3 percent. As shown in Table 24, if rural non-migrants were to migrate to urban areas, they would incur – on average – a proportionate welfare-loss of 8.2 percent, and only 34.1 percent of such migrants would gain. The results corresponding to an alternative model specification[62] are shown in Table 42 in the Appendix.

[62] In this alternative specification, the welfare regression includes – as regressors – "# of children" and "# of elderly".

Table 24: Migration-generated welfare gains; rural-to-urban migration (selectivity bias adjusted)

	Number of persons	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Rural-to-urban in-migrants	164	97.94	88.41 (Mean % gain = 113.70)	11.59 (Mean % loss = 22.32)
Rural non-migrants	1,460	-8.15	34.11 (Mean % gain = 23.90)	65.89 (Mean % loss = 24.74)

We have observed so far that with each of the two types of migration explored, some migrants reaped welfare gains whilst others incurred a loss. A natural question to ask is: why do some migrants gain and others do not? In other words, what factors influence the welfare outcome of migration? This question is not easy to explore empirically owing to the potentially important role of migrants' unobserved characteristics. An attempt was made – using a probit model – to investigate this issue. The results (see Table 40 in the Appendix) failed to provide a clear explanation for why some migrants gain and others do not, thus lending support to the view that unobserved attributes of migrants – such as determination and motivation – are crucial for the welfare outcome of migration. This notwithstanding, future follow-up work would explore the usefulness of decomposition analyses in unravelling some of the issues raised here.[63]

[63] I am grateful to Simon Appleton (the external examiner) for this suggestion.

6.5.8 Impact of return-migration on migrants' welfare

Our multivariate analysis has so far focused on in-migrants. Given the availability of data on return-migrants, it is instructive to investigate the impact of migration on the welfare of persons who have returned to their origin localities after engaging in either urban-to-rural or rural-to-urban migration. Thus, as an ancillary exercise, welfare regressions (with return-migrant dummies) are used to examine the impact of migration on the welfare of those return-migrants whose previous form of migration was urban-to-rural or rural-to-urban. We therefore estimate the following two welfare equations:

i) urbwelf: OLS welfare equation for a pooled sample of urban non-migrants and rural-to-urban return-migrants (that is, urban-to-rural-to-urban migrants);

ii) rurwelf: OLS welfare equation for a pooled sample of rural non-migrants and urban-to-rural return-migrants (that is, rural-to-urban-to-rural migrants);

In each of the two equations, the sample consists of non-migrants and return-migrants residing in the same urban or rural locality. This feature – non-existent in samples for our main model – facilitates the use of dummy variables to capture the effect of migration on return migrants' welfare. The dummy variables are defined as follows:

du1: 1 if urban-to-rural-to-urban migrant, 0 if urban non-migrant;

dr1: 1 if rural-to-urban-to-rural migrant, 0 if rural non-migrant.

The estimates of the above welfare regressions are shown in Table 25.

Table 25: Impact of inter-sectoral migration on return migrants' welfare

	(1) urbwelf		(2) rurwelf	
Male	-0.05	(0.04)	0.01	(0.03)
Household size	-0.10***	(0.01)	-0.12***	(0.01)
# of children (<15 yrs)	-0.03	(0.02)	-0.00	(0.01)
# of elderly (>65 yrs)	0.01	(0.04)	-0.01	(0.03)
MSLC/BECE	0.09**	(0.04)	0.06**	(0.03)
Voc., comm., O/A level	0.31***	(0.05)	-0.00	(0.06)
TT/nursing/tech/prof.	0.33***	(0.06)	0.27***	(0.08)
Degree holder	0.33	(0.27)	0.54*	(0.32)
Unspec. educ	0.44	(0.27)	-0.08	(0.21)
No educ qualification (omitted category)				
Empl in agric.	0.01	(0.07)	0.08	(0.06)
Empl in industry	0.04	(0.06)	0.13*	(0.07)
Empl in services	0.06	(0.05)	0.18***	(0.07)
Empl in other	0.00	(0.00)	-0.18	(0.55)
Unemployed (omitted category)				
du1	-0.03	(0.05)		
dr1			0.07***	(0.02)
HH - farm-related activity	-0.06	(0.06)	0.06	(0.05)
HH - food processing	-0.03	(0.04)	-0.02	(0.03)
HH - other business	0.13***	(0.04)	0.13***	(0.03)
Pipe-borne water	0.16***	(0.05)	0.04	(0.03)
Electricity/generator	0.33***	(0.05)	0.16***	(0.04)
Forest zone	-0.01	(0.06)	0.04	(0.03)
Savannah zone	-0.02	(0.10)	0.02	(0.05)
Coastal zone (omitted category)				
Western	-0.02	(0.22)	0.93***	(0.08)
Central	-0.41*	(0.22)	0.69***	(0.07)
Greater Accra	0.08	(0.22)	1.02***	(0.09)
Eastern	-0.13	(0.21)	0.64***	(0.06)
Volta	-0.20	(0.22)	0.78***	(0.07)
Ashanti	0.12	(0.22)	0.88***	(0.07)
Brong-Ahafo	-0.02	(0.21)	0.79***	(0.06)

Table 25: Continued …

	(1) urbwelf		(2) rurwelf	
Northern	-0.10	(0.20)	0.46***	(0.06)
Upper West	-0.18	(0.23)	0.29***	(0.07)
Upper East (omitted category)				
Constant	14.30***	(0.22)	13.40***	(0.10)
N	1165.00		2322.00	
r2	0.46		0.41	
r2_a	0.44		0.40	
F	33.12		53.26	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Our findings generally conform to those of the main model. The strong negative link between household size and welfare is confirmed. The strength of this link is about the same in both urban and rural areas (see Table 25). The positive welfare impact of education is given further support in both rural and urban samples. Furthermore, in rural localities, industrial and services sector workers tend to have significantly higher levels of welfare than the unemployed. The results for the rural sample further highlight the role of unobserved spatial effects in generating relatively low welfare levels in the three northern Regions (Northern, Upper West, and Upper East).

We now focus attention on the coefficients of the return-migrant dummies, which are the main variables of interest. Even though the coefficient of "du1" (the return-migrant dummy for the urban sample) has a negative sign, it is not statistically significant. The coefficient of "dr1" (the return-migrant dummy for the rural sample), on the other hand, is positive and highly significant. This provides evidence in support of return-migrants (that is rural-to-urban-to-rural migrants) being better off than rural non-migrants. This finding is consistent with our earlier result suggesting that rural-to-urban migration is, on average, very profitable for participants (see Table 24). Our findings in this ancillary analysis are consistent with what one might expect. Given that despite the existence of heterogeneities within urban and rural communities, urban welfare generally exceeds that of rural areas, and that the proportionate welfare gains of rural-to-urban in-migrants are, on average, much higher than that of their urban-to-rural counterparts, it is not surprising that those rural dwellers who used to live as migrants in urban areas are generally better off than rural non-migrants.

6.6 Conclusion

This chapter has empirically addressed – within the context of Ghana's rural-urban linkages – the following questions:

i) What are the major influences on migration decisions?

ii) What is the impact of migration on migrants' welfare?

Using data from the 1998/99 Ghana Living Standards Survey, as well as a method that corrects for selectivity bias, we have identified factors influencing migration decisions

between Ghana's rural and urban areas. Additionally, we have estimated the impact of migration on migrants' consumption welfare.

Our findings underscore the importance of anticipated welfare gains and personal attributes in migration decisions. We also find support for the positive selectivity of both urban-to-rural and rural-to-urban in-migrants. This particular result suggests that these in-migrants gained more than their non-migrant colleagues would have gained if they had migrated. The evidence for selectivity further justifies the incorporation of the correction for selectivity-bias in the analysis. Regarding our examination of migration's impact on migrants' welfare, the estimates of migration gains suggest different mean welfare impacts on our two types of in-migrants. Although some urban-to-rural in-migrants derived welfare gains from migrating, urban-to-rural migration had an overall negative impact on the welfare of in-migrants. In the case of rural-to-urban migration, a small percentage of in-migrants incurred welfare losses, but on average, migration enhanced considerably the welfare of in-migrants. Additionally, we find evidence to suggest that on the whole, rural non-migrants would have incurred a reduction in welfare if they had migrated to urban areas. Finally, by examining return migration, further insight has been shed on migration's welfare impact. All other things being equal, the welfare of *rural-to-urban-to-rural* migrants is generally higher than that of rural non-migrants.

This chapter's analysis represents a significant contribution to the Ghana migration and welfare literature, as well as to the wider migration literature. As far as we can ascertain from the literature on Ghana, this study is the first ever counterfactual analysis of migration's impact on migrants' welfare. Furthermore, the chapter's analysis does not only estimate the welfare impact on in-migrants, but also evaluates what the welfare impact on non-migrants would have been if they had migrated.

In the next chapter, attention is focused on another aspect of Ghana's rural-urban linkages, namely, remittance flows between rural and urban areas. The discussion on remittances should complement the present chapter's analysis and help strengthen our understanding of the various interactions that occur between residents of Ghana's rural and urban areas.

Appendix to Chapter Six

Table 26: Distribution of migrant type by in- or return-migrant status; 1991/92

	Share (%) of in-migrants	Share (%) of return-migrants	Total
Urban-to-urban	55.66	44.34	100.00
Urban-to-rural	41.47	58.53	100.00
Rural-to-urban	72.05	27.95	100.00
Rural-to-rural	62.77	37.23	100.00
Foreign-to-urban	12.79	87.21	100.00
Foreign-to-rural	25.71	74.29	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1991/92.

Table 27: Distribution of migrant type by in- or return-migrant status, 1998/99

	Share (%) of in-migrants	Share (%) of return-migrants	Total
Urban-to-urban	68.40	31.60	100.00
Urban-to-rural	40.33	59.67	100.00
Rural-to-urban	69.06	30.94	100.00
Rural-to-rural	54.58	45.42	100.00
Foreign-to-urban	29.78	70.22	100.00
Foreign-to-rural	20.93	79.07	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1998/99.

Table 28: Extent of migration by gender; 1991/92[64]

Sex	Non-migrant share (%) of population	Migrant share (%) of population	Total
Male	53.35 45.97	46.65 46.26	100.00 46.10
Female	53.65 54.03	46.35 53.74	100.00 53.90
Total	53.51 100.00	46.49 100.00	100.00 100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1991/92.

[64] For each cell in the Table, the first value represents the row percentage, whereas the second represents the column percentage.

Table 29: Extent of migration, by gender; 1998/99[65]

Sex	Non-migrant share (%) of population	Migrant share (%) of population	Total
Male	61.25 46.43	38.75 45.85	100.00 46.20
Female	60.70 53.57	39.30 54.15	100.00 53.80
Total	60.95 100.00	39.05 100.00	100.00 100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1998/99.

Table 30: Main reasons for migrating; 1991/92

Reason	Share (%) of responses; males	Share (%) of responses; females	Total
Own employment	29.82	5.35	16.66
Spouse's employment	9.84	12.29	11.15
Marriage	1.28	37.54	20.78
Other family reasons	38.46	37.39	37.89
School	3.57	2.09	2.77
Drought/war	0.97	0.19	0.55
Other	16.06	5.16	10.20
Total	100.00	100.00	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1991/92.

Table 31: Main reasons for migrating; 1998/99

Reason	Share (%) of responses; males	Share (%) of responses; females	Total
Own employment	42.37	8.41	23.99
Spouse's employment	3.53	13.83	9.11
Marriage	2.76	31.16	18.14
Other family reasons	36.31	38.57	37.53
School	2.10	0.62	1.30
Drought/war	1.42	0.79	1.08
Other	11.51	6.61	8.85
Total	100.00	100.00	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1998/99.

[65] For each cell in the Table, the first value represents the row percentage, whereas the second represents the column percentage.

Table 32: Mean consumption welfare (in '000 constant cedis) across migrant status and locality of residence; 1991/92

Migrant status	Urban	Rural
In-migrant	1,767.1	1,022.1
Return-migrant	1,936.6	1,146.8
Non-migrant	1,579.8	883.2

Source: Author's computation using data from the Ghana Living Standards Survey, 1991/92.

Table 33: Mean consumption welfare (in '000 constant cedis) across migrant status and locality of residence; 1998/99

Migrant status	Urban	Rural
In-migrant	1,958.1	1,294.7
Return-migrant	1,658.6	1,033.6
Non-migrant	1,710.9	977.4

Source: Author's computation using data from the Ghana Living Standards Survey, 1998/99.

Table 34: Distribution of internal migrants by age groups; 1991/92

Distribution (%) of internal migrants					
Age group (in years)	**Urban-to-urban**	**Urban-to-rural**	**Rural-to-urban**	**Rural-to-rural**	**Total**
15 ≤age< 25	25.82	34.36	10.55	29.27	100.00
25 ≤age< 35	24.41	31.67	9.17	34.75	100.00
35 ≤age< 45	29.64	30.50	10.42	29.45	100.00
45 ≤age< 55	23.94	34.29	9.21	32.57	100.00
55 ≤age< 65	18.98	29.94	7.44	43.64	100.00
Age≥65	18.59	27.53	6.82	47.06	100.00
Total	24.54	31.65	9.22	34.60	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1991/92

Table 35: Distribution of internal migrants by age groups; 1998/99

Distribution (%) of internal migrants					
Age group (in years)	**Urban-to-urban**	**Urban-to-rural**	**Rural-to-urban**	**Rural-to-rural**	**Total**
15 ≤age< 25	17.58	45.20	11.21	26.01	100.00
25 ≤age< 35	20.06	38.10	6.79	35.05	100.00
35 ≤age< 45	22.46	34.19	8.40	34.95	100.00
45 ≤age< 55	21.27	34.53	7.41	36.79	100.00
55 ≤age< 65	21.62	34.27	9.33	34.78	100.00
Age≥65	19.41	29.73	10.73	40.13	100.00
Total	20.78	35.79	8.44	34.99	100.00

Source: Author's computation using data from the Ghana Living Standards Survey, 1998/99.

Table 36: Test of equality of coefficients in the welfare regressions; urban-to rural in-migrants versus urban non-migrants

```
test [welf1_mean = welf0_mean], common;

 ( 1)  [welf1_mean]hhsize - [welf0_mean]hhsize = 0
 ( 2)  [welf1_mean]lnage_ad - [welf0_mean]lnage_ad = 0
 ( 3)  [welf1_mean]hiedq2 - [welf0_mean]hiedq2 = 0
 ( 4)  [welf1_mean]hiedq3 - [welf0_mean]hiedq3 = 0
 ( 5)  [welf1_mean]hiedq4 - [welf0_mean]hiedq4 = 0
 ( 6)  [welf1_mean]hiedq5 - [welf0_mean]hiedq5 = 0
 ( 7)  [welf1_mean]hiedq6 - [welf0_mean]hiedq6 = 0
 ( 8)  [welf1_mean]farmliv1 - [welf0_mean]farmliv1 = 0
 ( 9)  [welf1_mean]foodpr1 - [welf0_mean]foodpr1 = 0
 (10)  [welf1_mean]othbus1 - [welf0_mean]othbus1 = 0
 (11)  [welf1_mean]pbw1 - [welf0_mean]pbw1 = 0
 (12)  [welf1_mean]eg1 - [welf0_mean]eg1 = 0
 (13)  [welf1_mean]reg1 - [welf0_mean]reg1 = 0
 (14)  [welf1_mean]reg2 - [welf0_mean]reg2 = 0
 (15)  [welf1_mean]reg3 - [welf0_mean]reg3 = 0
 (16)  [welf1_mean]reg4 - [welf0_mean]reg4 = 0
 (17)  [welf1_mean]reg5 - [welf0_mean]reg5 = 0
 (18)  [welf1_mean]reg6 - [welf0_mean]reg6 = 0
 (19)  [welf1_mean]reg7 - [welf0_mean]reg7 = 0
 (20)  [welf1_mean]reg8 - [welf0_mean]reg8 = 0
 (21)  [welf1_mean]reg9 - [welf0_mean]reg9 = 0
```

chi2(21) = 44.67

Prob > chi2 (i.e., the p-value of the test) = 0.0019

Table 37: Test of equality of coefficients in the welfare regressions: rural-to-urban in-migrants versus rural non-migrants

```
test [welf1_mean = welf0_mean], common;

 (1)  [welf1_mean]hhsize - [welf0_mean]hhsize = 0
 (2)  [welf1_mean]lnage_ad - [welf0_mean]lnage_ad = 0
 (3)  [welf1_mean]hiedq2 - [welf0_mean]hiedq2 = 0
 (4)  [welf1_mean]hiedq3 - [welf0_mean]hiedq3 = 0
 (5)  [welf1_mean]hiedq4 - [welf0_mean]hiedq4 = 0
 (6)  [welf1_mean]hiedq5 - [welf0_mean]hiedq5 = 0
 (7)  [welf1_mean]empcat2 - [welf0_mean]empcat2 = 0
 (8)  [welf1_mean]empcat3 - [welf0_mean]empcat3 = 0
 (9)  [welf1_mean]empcat4 - [welf0_mean]empcat4 = 0
 (10)  [welf1_mean]empcat5 - [welf0_mean]empcat5 = 0
 (11)  [welf1_mean]othbus1 - [welf0_mean]othbus1 = 0
 (12)  [welf1_mean]pbw1 - [welf0_mean]pbw1 = 0
 (13)  [welf1_mean]eg1 - [welf0_mean]eg1 = 0
 (14)  [welf1_mean]reg1 - [welf0_mean]reg1 = 0
 (15)  [welf1_mean]reg2 - [welf0_mean]reg2 = 0
 (16)  [welf1_mean]reg3 - [welf0_mean]reg3 = 0
 (17)  [welf1_mean]reg4 - [welf0_mean]reg4 = 0
 (18)  [welf1_mean]reg5 - [welf0_mean]reg5 = 0
 (19)  [welf1_mean]reg6 - [welf0_mean]reg6 = 0
 (20)  [welf1_mean]reg7 - [welf0_mean]reg7 = 0
 (21)  [welf1_mean]reg8 - [welf0_mean]reg8 = 0
 (22)  [welf1_mean]reg9 - [welf0_mean]reg9 = 0
```

chi2(22) = 156.22

Prob > chi2 (i.e., the p-value of the test) = 0.0000

Table 38: First stage probit of urban-to-rural migration model

	(1)	
	probit1	
Age:[15, 25)	-0.82**	(0.35)
Age:[25, 35)	-0.34	(0.24)
Age:[35, 45)	-0.07	(0.20)
Age:[45, 55)	0.09	(0.19)
Age:[55, 65)	0.01	(0.19)
Age≥65 (omitted category)		
Log mean age of adults	-0.65**	(0.25)
Asante	0.27	(0.22)
Fanti	0.27	(0.23)
Other Akan	0.28	(0.21)
Ga-Adangbe	0.31	(0.24)
Ewe	0.62***	(0.24)
Other tribe	0.40*	(0.23)
Northern tribes (omitted category)		
Male	0.60***	(0.11)
Never married	-0.28	(0.19)
Household size	-0.02	(0.02)
MSLC/BECE	0.11	(0.12)
Voc., comm., O/A level	0.11	(0.17)
TT/nursing/tech/prof.	0.62***	(0.17)
Degree holder	0.80	(0.50)
Unspecified education	0.34	(0.66)
No educ qualification (omitted category)		
Farm/livestock	0.17	(0.13)
Food processing	0.34***	(0.11)
Other business	-0.03	(0.09)
Pipe-borne water	-0.98***	(0.12)
Electricity/generator	-0.81***	(0.12)
Western	1.72***	(0.57)
Central	1.39**	(0.59)
Greater Accra	0.90	(0.58)
Eastern	0.33	(0.58)
Volta	1.53***	(0.57)
Ashanti	1.68***	(0.57)
Brong-Ahafo	0.95*	(0.57)
Northern	-0.55	(0.59)
Upper West	-0.16	(0.70)
Upper East (omitted category)		
Constant	0.78	(1.18)
N	1447.00	
r2_p	0.39	
chi2	666.88	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_p: Pseudo r2

Table 39: First stage probit of rural-to-urban migration model

	(1) probit1	
Age:[15, 25)	-1.03**	(0.51)
Age:[25, 35)	-0.90***	(0.31)
Age:[35, 45)	-0.41*	(0.25)
Age:[45, 55)	0.05	(0.23)
Age:[55, 65)	0.12	(0.23)
Age≥65 (omitted category)		
Log mean age of adults	-0.53	(0.33)
Asante	-1.19***	(0.35)
Fanti	-0.27	(0.35)
Other Akan	-0.52*	(0.30)
Ga-Adangbe	-3.08***	(0.56)
Ewe	-0.29	(0.32)
Other tribe	-0.39	(0.29)
Northern tribes (omitted category)		
Never married	-0.18	(0.31)
Household size	-0.05*	(0.03)
MSLC/BECE	0.12	(0.15)
Voc., comm., O/A level	0.36	(0.26)
TT/nursing/tech/prof.	0.26	(0.28)
Degree holder	-0.18	(0.87)
No educ qualification (omitted category)		
Empl in agric.	-0.65***	(0.25)
Empl in industry	0.24	(0.27)
Empl in services	0.07	(0.24)
Unemployed (omitted category)		
Other business	0.03	(0.13)
Pipe-borne water	0.79***	(0.15)
Electricity/generator	0.74***	(0.16)
Western	4.54***	(1.45)
Central	4.12***	(1.45)
Greater Accra	7.21***	(1.52)
Eastern	4.81***	(1.46)
Volta	5.15***	(1.46)
Ashanti	5.67***	(1.43)
Brong-Ahafo	5.34***	(1.43)
Northern	5.14***	(1.43)
Upper East (omitted category)		
Constant	-3.94	(0.00)
N	1648.00	
r2_p	0.49	
chi2	528.29	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_p: Pseudo r2

Table 40: Factors influencing the outcome of inter-sectoral migration

	(1) Urban-to-rural		(2) Rural-to-urban	
Recvd urban remittance	-0.12	(0.18)	-0.77	(4003.35)
Recvd rural remittance	0.05	(0.27)	15.83	.
Recvd foreign remittance	0.32	(0.33)	-6.09	(0.00)
Longer-term migrant dummy	0.42	(0.26)	-9.45	(5487.68)
Migrant married	-0.02	(0.39)	-4.28	(0.00)
Migrant in informal union	-0.11	(0.40)	3.13	(4644.91)
Migrant div/separated	-0.77*	(0.43)	-0.38	(0.00)
Migrant widowed	-0.26	(0.44)	9.25	.
Migrant never married (omitted category)				
Age:[15, 25)	-0.00	(0.60)		
Age:[25, 35)	-0.24	(0.44)	-17.18	(0.00)
Age:[35, 45)	-0.48	(0.42)	-5.92	(4899.71)
Age:[45, 55)	-0.69	(0.43)	-4.74	(0.00)
Age:[55, 65)	-0.43	(0.42)	-7.68	(0.00)
Age≥65 (omitted category)				
Household size	-0.07	(0.07)	0.69	(1975.38)
# of children (<15 yrs)	0.06	(0.09)	0.07	(2543.59)
# of elderly (>65 yrs)	-0.19	(0.37)	-6.61	(0.00)
Empl in agric.	0.53	(0.52)	-2.07	(0.00)
Empl in industry	0.28	(0.55)	8.39	.
Empl in services	-0.12	(0.52)	6.32	(4850.87)
Unemployed (omitted category)				
Pipe-borne water	0.29	(0.28)	21.14	.
Electricity/generator	0.71**	(0.28)	6.99	.
Forest zone	0.36	(0.30)	-3.14	(0.00)
Savannah zone	-0.20	(0.65)	14.83	.
Western	4.93***	(0.81)	14.70	.
Central	5.69***	(0.81)	-17.20	(0.00)
Greater Accra	6.51***	(0.88)		
Eastern	4.41***	(0.88)	0.54	.
Volta	5.39***	(0.86)	-0.02	(0.00)

Table 40: Continued …

	(1) Urban-to-rural		(2) Rural-to-urban	
Ashanti	4.40***	(0.85)	12.08	.
Brong-Ahafo	4.34***	(0.91)		
Northern	5.93***	(1.26)		
Upper East (omitted category)				
Constant	-5.91	(0.00)	-3.16	(0.00)
r2_p	0.19		1.00	
chi2	78.98		95.52	
N	335.00		96.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_p: Pseudo r2

Table 41: Migration-generated welfare gains, using an alternative model specification; urban-to-rural migration[66]

	Number of persons	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Urban-to-rural in-migrants	337	-8.76	33.53 (Mean % gain = 26.87)	66.47 (Mean % loss = 26.74)
Urban non-migrants	1,036	-62.77	0	100 (Mean % loss = 62.77)

Table 42: Migration-generated welfare gains, using an alternative model; rural-to-urban migration

	Number of persons	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Rural-to-urban in-migrants	164	96.53	89.02 (Mean % gain = 111.32)	10.98 (Mean % loss = 23.40)
Rural non-migrants	1,460	9.86	57.19 (Mean % gain = 34.44)	42.81 (Mean loss = 22.98)

[66] In this alternative model, the welfare regression includes "number of children" and "number of elderly" as regressors.

Table 43: Test of validity of exclusion restriction: urban-to-rural migration model

	(1) welf1		(2) welf0		(3) Probit	
Male	**0.04**	**(0.09)**	**-0.04**	**(0.04)**	**0.44*** **	**(0.16)**
Household size	-0.12***	(0.01)	-0.11***	(0.01)		
Longer-term migrant dummy	0.14*	(0.08)				
Log mean age of adults	-0.15	(0.11)	0.04	(0.06)		
MSLC/BECE	0.15**	(0.07)	0.07*	(0.04)	0.33*	(0.17)
Voc., comm., O/A level	0.40***	(0.12)	0.31***	(0.05)	0.03	(0.28)
TT/nursing/tech/prof.	0.53***	(0.12)	0.32***	(0.07)	0.06	(0.24)
Degree holder	1.31***	(0.36)	0.33	(0.27)		
Unspecified education	0.25	(0.47)	0.43	(0.27)		
No educ qualification (omitted category)						
Farm/livestock	0.09	(0.10)	-0.10*	(0.05)		
Food processing	0.04	(0.08)	-0.03	(0.05)		
Other business	0.01	(0.06)	0.14***	(0.03)		
Pipe-borne water	-0.12	(0.15)	0.19**	(0.08)		
Electricity/generator	0.13	(0.12)	0.33***	(0.06)		
Western	0.71	(0.51)	-0.03	(0.23)		
Central	0.62	(0.50)	-0.44**	(0.22)		
Greater Accra	0.74	(0.49)	0.05	(0.21)		
Eastern	0.25	(0.48)	-0.17	(0.21)		
Volta	0.58	(0.50)	-0.20	(0.23)		
Ashanti	0.73	(0.51)	0.11	(0.22)		
Brong-Ahafo	0.55	(0.49)	-0.04	(0.21)		
Northern	0.20	(0.52)	-0.10	(0.20)		
Upper West	-0.30	(0.61)	-0.18	(0.23)		
Upper East (omitted category)						
Selectivity	0.38**	(0.19)	-0.00	(0.14)		
Age:[15, 25)					-0.65*	(0.39)
Age:[25, 35)					-0.47*	(0.25)
Age:[35, 45)					0.15	(0.23)
Age:[45, 55)					0.13	(0.23)
Age:[55, 65)					0.14	(0.24)

Table 43: Continued …

	(1) welf1		(2) welf0		(3) Probit	
Age≥65 (omitted category)						
Asante					1.76***	(0.24)
Fanti					0.65**	(0.26)
Other Akan					0.58***	(0.22)
Ga-Adangbe					0.62*	(0.37)
Ewe					0.18	(0.24)
Other tribe					1.41***	(0.29)
Northern tribes (omitted category)						
Never married					0.03	(0.29)
Anticipated welfare gain					4.59***	(0.28)
Constant	13.91***	(0.70)	14.21***	(0.29)	0.88***	(0.30)
N	403.00		1044.00		1372.00	
r2	0.42		0.45			
r2_a	0.39		0.44			
F	11.50		36.95			
r2_p					0.70	
chi2					1066.46	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

Table 44: Test of validity of exclusion restriction; rural-to-urban migration model

	(1) welf1		(2) welf0		(3) Probit	
Other Akan	**0.06**	**(0.09)**	**-0.03**	**(0.04)**	**0.59*** **	**(0.20)**
Household size	-0.11***	(0.01)	-0.12***	(0.01)		
Longer-term migrant dummy	-0.14	(0.12)				
Log mean age of adults	0.10	(0.15)	-0.06	(0.05)		
MSLC/BECE	0.11	(0.09)	0.05	(0.03)	-0.15	(0.14)
Voc., comm., O/A level	0.34***	(0.13)	0.00	(0.08)	-0.61**	(0.27)
TT/nursing/tech/prof.	0.45***	(0.13)	0.25**	(0.11)	0.15	(0.27)
Degree holder	-0.10	(0.48)	0.82**	(0.39)		
No educ qualification (omitted category)						
Empl in agric.	-0.19	(0.16)	0.22***	(0.08)		
Empl in industry	0.12	(0.14)	0.17*	(0.09)		
Empl in services	0.11	(0.13)	0.25***	(0.08)		
Empl in other	0.00	(0.00)	0.00	(0.00)		
Unemployed (omitted category)						
Other business	0.05	(0.07)	0.13***	(0.03)		
Pipe-borne water	0.43***	(0.14)	0.05	(0.05)		
Electricity/generator	0.48***	(0.11)	0.07	(0.05)		
Western	0.35*	(0.21)	0.92***	(0.08)		
Central	-0.56*	(0.29)	0.67***	(0.07)		
Greater Accra	0.32	(0.20)	0.93***	(0.11)		
Eastern	0.09	(0.20)	0.65***	(0.07)		
Volta	-0.16	(0.20)	0.74***	(0.07)		
Ashanti	0.49**	(0.19)	0.89***	(0.07)		
Brong-Ahafo	0.28	(0.22)	0.74***	(0.08)		
Northern	0.00	(0.00)	0.42***	(0.07)		
Upper West	0.00	(0.00)	0.00	(0.00)		
Upper East (omitted category)						
Selectivity	0.20	(0.12)	-0.23	(0.14)		

Table 44: Continued …

	(1) welf1		(2) welf0		(3) Probit	
Age:[15, 25)					-0.13	(0.48)
Age:[25, 35)					0.04	(0.21)
Age:[35, 45)					0.44**	(0.20)
Age:[45, 55)					0.29	(0.19)
Age:[55, 65)					0.10	(0.20)
Age≥65 (omitted category)						
Asante					0.40*	(0.23)
Fanti					0.18	(0.22)
Ewe					0.29	(0.20)
Other tribe					-0.01	(0.22)
Northern tribes (omitted category)						
Never married					-0.06	(0.30)
Anticipated welfare gain					2.83***	(0.18)
Constant	13.28***	(0.59)	13.59***	(0.23)	-2.09***	(0.21)
N	168.00		1480.00		1619.00	
r2	0.66		0.38			
r2_a	0.61		0.37			
F	13.05		40.80			
r2_p					0.44	
chi2					452.94	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

Chapter Seven:
Remittance Flows between Rural and Urban Sectors[67]

7.1 Introduction

The preceding chapter has emphasised the prevalence and importance of migration in Ghana. As noted in the fourth chapter, however, migration is often associated with remittance flows, and anecdotal evidence suggests that this is true for Ghana. We have also identified various themes relating to Ghana's remittances that merit further research. Notable amongst these are the poverty and welfare impacts of remittance flows. The present chapter addresses some of the identified gaps in the Ghana remittance literature.

The chapter empirically examines aspects of Ghana's internal remittances by focusing on remittance transfers between rural and urban areas. To motivate the analysis, four main research questions are posed; within the context of rural-urban interactions, these are:

(i) What are the determinants of remittance outflows?
(ii) What are the determinants of remittance receipts?
(iii) What is the impact of remittances on recipients' welfare?

As a prelude to the main empirical investigation, descriptive statistics are used to provide basic information about the profile and magnitudes of Ghana's remittance flows. The substantive analysis, however, consists of the application of regression analysis using data from the 1998/99 Ghana Living Standards Survey (that is, GLSS4)[68]. In this study, a remittance is defined as the transfer of cash, food, or any other item from one individual (or household) to another individual (or household), where the recipient is not required to pay back. Consequently, the data for the analysis

[67] A paper based on this chapter was presented at the 2007 CSAE (Centre for the Study of African Economies) Conference at the University of Oxford. I am very grateful for comments received from Conference participants.
[68] The 1991/92 GLSS data are not included due to the survey's omission of multiple remittance transfers and receipts.

exclude loans and intra-household transfers. Even though 5,998 households were covered in the survey, 5975 observations remained after all relevant variables had been generated.

The rest of the chapter is organised as follows. In the next section, descriptive statistics are used to present a profile of the patterns and magnitudes of Ghana's remittance flows in 19989/99. The modelling strategy for the empirical analysis is outlined in the third section. The empirical analysis is provided in the fourth section, with section five concluding the chapter.

7.2 Profile and magnitudes of remittance flows

At this point it is appropriate to identify patterns and magnitudes of Ghana's remittance flows. Out of the 5,998 households covered in the survey, 3,891 (that is, 64.87 percent) were either senders or recipients of remittances. As indicated in Table 45, about a quarter of households sent remittances without receiving any. Households that only received remittances, constituted 21.94 percent of the entire sample, whereas 17.94 percent of households sent and were sent remittances. These figures suggest remittances have considerable potential for affecting households' living standards, especially if remittance sizes are large.

Table 45: Distribution of households by remittance status

Remittance status	Frequency	Percent	Cumulative percentage
Sent only	1,499	24.99	24.99
Received only	1,316	21.94	46.93
Sent and Received	1,076	17.94	64.87
Neither sent nor received	2,107	35.13	100.00
Total	5,998	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

An examination of the data shows some insightful patterns of remittance flows. Out of the 2,575 households that sent remittances, the urban and rural sectors accounted for 36.1 percent and 63.9 percent, respectively (see Table 46). To place this in context, it is

instructive to note that the shares of urban and rural households in the entire sample are 36.7 percent and 63.3 percent, respectively. Most (65.7 percent) remitting households sent remittances to the urban sector. The proportion of remitting households that sent remittances to rural households is 45.7 percent (see Table 46). In examining Table 46, it should be noted that some households sent remittances to more than one sector, and as a result, the row totals exceed the figures in the final column. As expected, a very small proportion of remitting households sent remittances to persons living outside Ghana. In all, 1.4 percent of remitting households sent remittances to persons residing abroad, but within Africa, while only nine households – four urban and five rural – sent remittances to individuals living outside Africa.

Table 46: Distribution of destination of remittance outflows, by locality of remitter (mean transfer – in '000 cedis – of senders in parentheses)

Locality of remitting household	Sent to the urban sector	Sent to the rural sector	Sent abroad (within Africa)	Sent outside Africa	All senders, irrespective of destination
Urban	699 (333.5)	299 (239.1)	14 (162.3)	4 (171.1)	930 (330.7)
Rural	994 (222.1)	879 (198.5)	21 (157.0)	5 (465.0)	1,645 (243.7)
Total	1,693 (268.1)	1,178 (208.8)	35 (159.1)	9 (334.4)	2,575 (275.1)

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

Even though most remitters sent remittances to the urban sector (not necessarily exclusively), remittances sent outside Africa registered the highest remitters' mean transfer. This is followed by remittances sent to the urban sector, those sent to rural areas, and transfers to persons living abroad (within Africa), in that order (see Table 46). On the whole, rural remitters' mean transfer forms roughly 74 percent of that of their urban counterparts, an unsurprising result, given the welfare gap between the two sectors.

The profile of remittance receipts also provides much insight into Ghana's remittance flows. A total of 2,392 households received remittances, with rural recipients accounting for 63.3 percent of this total – a share that corresponds to the proportion of

rural households in the survey sample. The discrepancy between the number of remitters and that of recipients stems from features of the dataset; apart from the fact that the remittance outflow and receipt sections do not pair remitters with recipients, some households sent remittances to more than one person, and other recipients had multiple remitters. The most common source of remittances is the urban sector; more than 70 percent of recipient households received remittances from this sector (see Table 47). On the other hand, all households that received remittances from any of the other three sources – rural, abroad (within Africa), and outside Africa – accounted for less than 40 percent of the sample of recipients; a similar pattern is observed amongst each of urban and rural recipients.

Table 47: Distribution of sources of households' remittance receipts, by locality of recipient (mean remittance – in '000 cedis – of recipients in parentheses)

Locality of recipient household	Received from the urban sector	Received from the rural sector	Received from abroad (within Africa)	Received from outside Africa	All recipients, irrespective of source
Urban	631 (604.3)	86 (291.9)	35 (799.3)	230 (1,605.7)	876 (917.5)
Rural	1,149 (256.6)	336 (117.3)	84 (172.8)	126 (704.0)	1,516 (288.6)
Total	1,780 (379.9)	422 (152.9)	119 (357.0)	356 (1,286.6)	2,392 (518.9)

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

A striking feature of the profile of remittance receipts is the huge gap between the urban and rural sectors, in terms of recipients' mean remittance receipt; rural recipients' mean remittance receipt represents 31.5 percent of that of urban recipients (see Table 47). Indeed, for each of the four sources of remittances receipts, urban recipients' mean receipt is more than twice that of rural recipients. For the entire sample of recipients, remittances from outside Africa yielded overwhelmingly the highest recipients' mean remittance, followed by transfers from the urban sector, abroad (within Africa), and the rural sector, in that order. While this overall pattern is mirrored in the rural sector, a slightly different pattern emerges within the urban sector. Amongst urban recipients, the source yielding the largest recipients' mean remittance is "outside Africa", but is followed by "abroad (within Africa)", the urban sector, and the rural sector, in that

order. Apart from reflecting the low welfare levels in rural Ghana, these findings echo the popular opinion that relatively large remittances (per transfer) are usually sent from North America or Europe.

The fact that some of the households in our sample sent remittances to (or received remittances from) both rural and urban localities has already been noted. An implication of this is the presence of multiple recipients and remitters, although the occurrence of multiple recipients or remitters need not be associated with transfers to (or from) both rural and urban areas. Although the majority (59.5%) of remitters sent remittances to only one person, more than a fifth of remitters had two recipients. The highest number of recipients – within each of rural and urban remitters – was six. On the whole, a decreasing share of remitters is associated with increasing numbers of recipients (see Table 48). This overall pattern is also observed within each of the urban and rural sectors.

The distribution of recipients' number of remitters is quite similar to the patterns observed for remitters' number of recipients (see Table 49). Amongst all recipients, as well as within each of the rural and urban sectors, the bulk (more than 60 percent) of recipient households received remittances from only one person. Again, declining shares of recipients are associated with rising numbers of remitters. The highest number of remitters within each of the rural and urban sectors was six, with thirteen urban households and nine rural households falling in this category.

Table 48: Distribution of remitters' number of recipients (column percentages in parentheses)

Number of recipients	*Urban households*	*Rural households*	*All households*
1	586 (63.01%)	947 (57.57%)	1,533 (59.53%)
2	216 (23.23%)	387 (23.53%)	603 (23.42%)
3	76 (8.17%)	161 (9.79%)	237 (9.20%)
4	35 (3.76%)	83 (5.05%)	118 (4.58%)
5	7 (0.75%)	42 (2.55%)	49 (1.90%)
6	10 (1.08%)	25 (1.52%)	35 (1.36%)
Total	930 (100%)	1,645 (100%)	2,575 (100%)

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

Table 49: Distribution of recipients' number of remitters (column percentages in parentheses)

Number of recipients	*Urban households*	*Rural households*	*All households*
1	565 (64.50%)	955 (62.99%)	1,520 (63.55%)
2	165 (18.84%)	338 (22.30%)	503 (21.03%)
3	78 (8.90%)	119 (7.85%)	197 (8.24%)
4	37 (4.22%)	64 (4.22%)	101 (4.22%)
5	18 (2.05%)	31 (2.04%)	49 (2.05%)
6	13 (1.48%)	9 (0.59%)	22 (0.92%)
Total	876 (100%)	1,516 (100%)	2,392 (100%)

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

7.3 Modelling of remittance flows and of their impact on recipients' welfare

7.3.1 Analytical framework

The analytical framework for our empirical analysis draws on various aspects of the literature on remittances (Banerjee, 1984; Hoddinott, 1992; Adams, 2004), sample selection bias (Lee, 1978; Heckman, 1979; Nakosteen and Zimmer, 1980) and the evaluation of the counterfactual (Lee, 1978; Adams, 2004). We employ the Heckman two-step technique to examine factors influencing remittance decisions. A key feature of this methodology is the treatment of the remittance decision as comprising two sequential decisions, namely, the decision to remit, and the decision on the amount of remittances to send. As noted earlier, this has the advantage of facilitating the separate analyses of factors underlying the decision to remit, and of those influencing the decision about remittance size.

Although Tobit regressions are sometimes used to analyse remittance flows, the method restricts the two remittance decisions to be influenced by the same factors and in the same manner. Thus, where there is significant interest in exploring subtleties in remittance decisions, it is arguably better to employ a methodology – such as the Heckman two-step technique – that can highlight differences in factors influencing the two remittance decisions. Thus, the Heckman-type two-step approach has the potential of providing better insight into remittance behaviour than the use of a probit model. Moreover, by using a selectivity-adjusted two-step method, split samples – for example, remittance recipients and non-recipients – can be further analysed appropriately. Indeed, the application of the Heckman-type technique to the analysis of remittances is now firmly established in the literature (see Banerjee, 1984; Hoddinott, 1992; and Adams, 2006). Even though the present study's preferred methodology is the selectivity-adjusted two-step method, corresponding Tobit estimates are reported alongside our main results, but will not be the central focus of the discussion.

Following Hoddinott (1992), let:
The amount of remittances sent by household i be denoted by R_i; and
Household i's decision to remit be denoted by P_i, where:

P_i is a function of observed (Z) and unobserved (g) variables;
$P_i = 1$ if $R_i > 0$; and
$P_i = 0$ if $R_i = 0$

The amount of remittances sent (R_i) is modelled as a function of observed (X) and unobserved (h) variables, but conditional on $P_i = 1$.
Thus, $P_i = P(Z, g)$ and $R_i = R(X, h)$

It has been noted that it is generally inappropriate to estimate a remittance function with observations on remitters only. This is because remitters can be viewed as a non-randomly selected sample, and as a result, the coefficients obtained from such an exercise may be biased in a manner similar to what occurs in the ordinary problem of omitted variable bias (Banerjee, 1984).

One major technique for circumventing this problem is the application of Heckman's (1979) two-step procedure for the estimation of the coefficients of X. The first step of the procedure is the estimation of a probit for the remittance decision. After estimating the probit, a variable – the inverse Mills' ratio (*IMR*) – is generated from the probit's fitted values ($\hat{\psi}_i$) as follows:

$IMR = f(\hat{\psi}_i) / F(\hat{\psi}_i)$,
where
f: the density function of a standard normal random variable; and
F: the cumulative distribution function of a standard normal random variable.

The inverse Mills' ratio is then inserted as an additional regressor in the function for the remittance amount sent. This remittance level equation is then estimated by OLS. The described technique is also applied to the analysis of remittance receipts.

In order to estimate the impact of remittances on recipients' welfare, we employ counterfactual scenarios, coupled with the estimation of an index of welfare gain due to remittance receipts. Essentially, the counterfactual scenarios attempt to capture – for each household, regardless of remittance receipt status – household welfare if the household were a recipient, as well as household welfare if the household were a non-recipient. Since each household in the dataset is either a remittance recipient or a non-

recipient, we observe each household's welfare level as a recipient or as a non-recipient, but not both. For each household, the particular unobserved welfare level is determined by applying the estimated selectivity-adjusted parameters to the household's relevant characteristics.

The index of welfare gain is derived by calculating the mean proportionate increase in welfare between remittance receipt and non-receipt scenarios as follows:

For any sub-group (δ) of the entire sample, let $N(\delta)$ be the corresponding population size;
Then, for any sub-group (δ), the average proportionate welfare increment attributable to the receipt of remittances may be expressed as:

$$g = \frac{1}{N(\delta)} \sum_{i \in \delta} \frac{Wri - Wni}{Wni}$$

Where, *Wri* and *Wni* – household *i*'s welfare levels[69] as a recipient, and as a non-recipient, respectively – are proxied by their corresponding fitted values.

7.3.2 Estimation procedure

Steps 1-3 summarise the general approach of our empirical analysis. Since the chapter's focus is on remittance flows between rural and urban sectors, the procedure – appropriately tweaked – is applied to each of the following cases:

a) Urban-to-rural remittances
b) Rural-to-urban remittances.

1. What are the determinants of remittance outflows?
The use of Heckman's two-step method (see Hoddinott, 1992);

i. Probit equation for the decision concerning whether (or not) to remit, using a pooled sample of remitters and non-remitters;

[69] Instead of approximating the proportionate welfare change with the difference in log welfare, we adopt Lee's (1978) approach of deriving the welfare level from log welfare by using the relation $x = e^{\log x}$.

ii. The derivation of the selectivity variable (i.e., the inverse Mills' ratio);

iii. OLS estimation of a remittance outflow function using the sample of remitters, with the inclusion of the selectivity variable as an additional regressor.

2. What are the determinants of remittance receipts?

The use of Heckman's two-step method;

i. Probit equation for identifying factors influencing whether (or not) a household receives any remittance, using a pooled sample of recipients and non-recipients;

ii. The derivation of the selectivity variable (i.e., the inverse Mills' ratio);

iii. OLS estimation of a remittance receipt function using the sample of recipients, with the inclusion of the selectivity variable as an additional regressor.

3. What is the impact of remittances on recipients' welfare?

The use of Heckman's two-step method;

i. Probit estimation of the reduced-form remittance receipt equation, using a pooled sample of recipients and non-recipients;

ii. The derivation of selectivity variables for the recipient and non-recipient welfare regressions as follows;

Selectivity variable for the recipient welfare regression:

$IMR = f(\hat{\psi}_i) / F(\hat{\psi}_i)$

Selectivity variable for the non-recipient welfare regression:

$IMR = f(\hat{\psi}_i) /[1- F(\hat{\psi}_i)]$

Where:

f: the density function of a standard normal random variable;

F: the cumulative distribution function of a standard normal random variable; and

$\hat{\psi}_i$: a vector of the probit regression's fitted values.

iii. OLS estimation of a welfare function for the sample of recipients, with the inclusion of the appropriate selectivity variable as an additional regressor;

iv. OLS estimation of a welfare function for the sample of non-recipients, with the inclusion of the appropriate selectivity variable as an additional regressor;
v. Computation of an index of welfare differential between receipt and non-receipt scenarios.

In adapting steps 1-3 to the cases of urban-to-rural and rural-to-urban remittance flows, the following modification is made:

Urban-to-rural

What determines whether an urban household will transfer remittances to the rural sector?

Sample: a pooled sample of urban households who did not remit and those who sent remittances to rural households.

What determines whether a rural household will receive a remittance from the urban sector?

Sample: a pooled sample of rural households who did not receive remittances and those who received remittances from urban households.

What is the impact of urban-to-rural remittances on recipients' welfare?

Sample: a pooled sample of rural households who did not receive remittances and those who received remittances from urban households.

Rural-to-urban

What determines whether a rural household will send remittances to the urban sector?

Sample: a pooled sample of rural households who did not remit and those who sent remittances to urban households.

What determines whether an urban household will receive a remittance from the rural sector?

Sample: a pooled sample of urban households who did not receive remittances and those who received remittances from rural households.

What is the impact of rural-to-urban remittances on recipients' welfare?
Sample: a pooled sample of urban households who did not receive remittances and those who received remittances from rural households.

7.4 Empirical analysis

7.4.1 The variables

In our remittance expenditure regressions, the dependent variable is the natural logarithm of remittance expenditure, whereas the natural logarithm of remittance income is used as the dependent variable in the remittance receipt regressions. In the welfare regressions, the dependent variable is the logarithm of a measure of household consumption welfare. This measure of household consumption welfare is defined as the total real consumption expenditure per adult equivalent.

On the basis of theory and the literature, the regressors used in the analysis consist broadly of household characteristics, as well as locational variables. These include the presence of an in-migrant, the household head's attributes, characteristics of remittance recipients, characteristics of remitters, dummy variables representing total household employment income categories[70], and regional and ecological zone indicators. It should be noted that the various urban-to-rural and rural-to-urban models do not have the same set of regressors. This is because the coefficients of some regressors were significant in one model, but insignificant in the other.

[70] These categories are:
(i) Zero (no employment income);
(ii) Low (non-zero, but less than one million cedis per year);
(iii) Medium (at least one million – but less than two million – cedis per year);
(iv) High (at least two million cedis per year).

An important contribution of this chapter is the inclusion, where appropriate, of a regressor that captures the kin-fostering status of a household. In this connection, a kin-fostered individual is defined as a person who satisfies all of the following criteria[71]:

i) Less than 18 years old;

ii) None of the parents is a member of the household; and

iii) Related to the household head or to the household head's spouse.

As observed in the preceding chapter, anecdotal evidence suggests that kin-fostering is widespread in Ghana. This is further supported by the kin-fostering component of the GLSS4 fostering estimates (see Table 59 in the Appendix to this chapter).

Regarding the method used, a requirement for the identification of a remittance function is the presence of at least one regressor in the probit that is excluded from the adjusted OLS (see Hoddinott, 1992). The identifying variable(s) – i.e., the exclusion restriction – for each remittance function was determined on the basis of a preliminary analysis of the data relating to the relevant function. In the tables of regression estimates, these identifying variables have been highlighted. In estimating the selectivity-corrected welfare regressions, however, a common exclusion restriction (a household head age dummy) was found for the two equations. In all cases, tests were carried out to assess the validity of the choice of identifying variable(s); these tests have been reported in the Appendix to the chapter. Additionally, tests were performed to assess the validity of estimating separate welfare regressions for remittance recipients and non-recipients; the tests (see Table 61 and Table 62) did not accept the hypothesis that the welfare regression coefficients are the same for remittance recipients and non-recipients. This further lends credence to the methodology adopted in this study.

Table 50 shows the means and standard deviations of variables used in this chapter's regression analysis. A note about the a priori expectations of some of the key regressors is in order. A household's income category is expected to have an influence on remittance flows. Specifically, all else being equal, households belonging to higher employment income groups are more likely to send remittances and in larger amounts than those without employment income. Similarly, ceteris paribus, a recipient's income category will be inversely related to remittance receipts if altruism is the dominant

[71] The first two criteria define a fostered individual, but kin-fostering is what is of interest here.

motivation for the transfers. Given the strong association between remittances and migration, we expect the presence of in-migrants to influence remittance flows between their previous and current localities. Also, ceteris paribus, the stronger the relationship between the remitter and the sender, the larger the amount of remittances will be. Finally, we expect the selectivity variable to be statistically significant if selectivity bias characterises remittance flows.

Table 50: Means and standard deviations of variables

Variable description	Number of observations	Mean	Standard deviation
Household employment income	5975	455094.2	1293850
U-R migrant present (dummy)	5994	1.90	0.30
R-U migrant present (dummy)	5994	1.96	0.20
15≤head's age<25 (dummy)	5975	0.05	0.21
25≤head's age<35 (dummy)	5975	0.22	0.41
35≤head's age<45 (dummy)	5975	0.25	0.43
45≤head's age<55 (dummy)	5975	0.21	0.41
55≤head's age<65 (dummy)	5975	0.14	0.35
Head at least 65 years old (dummy)	5975	0.14	0.35
Male head (dummy)	5975	0.66	0.47
Head married (dummy)	5975	0.53	0.50
Head in informal union (dummy)	5975	0.13	0.34
Head divorced/separated (dummy)	5975	0.15	0.36
Head widowed (dummy)	5975	0.11	0.31
Head never married (dummy)	5975	0.08	0.27
Head - no educ. qualification (dummy)	5975	0.54	0.50
Head-MSLC/BECE (dummy)	5975	0.32	0.47
Head-voc/comm/O/A (dummy)	5975	0.07	0.26
Head-TT/nursing/tech/prof (dummy)	5975	0.05	0.23
Head-degree holder (dummy)	5975	0.01	0.07
Head-unspec. educ (dummy)	5975	0.00	0.06
Head unemployed (dummy)	5975	0.07	0.26
Head-agriculture (dummy)	5975	0.52	0.50
Head-industry (dummy)	5975	0.12	0.32
Head-services (dummy)	5975	0.29	0.45
Head-other sector (dummy)	5975	0.00	0.02
Farm-related activity (dummy)	5975	0.67	0.47
Food processing (dummy)	5975	0.61	0.49
Other business (dummy)	5975	0.47	0.50
Pipe-borne water (dummy)	5975	0.41	0.49
Electricity/generator (dummy)	5975	0.40	0.49
Coastal ecological zone dummy	5975	0.35	0.48
Forest ecological zone dummy	5975	0.45	0.50
Savannah ecological zone dummy	5975	0.20	0.40
Western Region dummy	5975	0.11	0.31
Central Region dummy	5975	0.12	0.32
Greater Accra Region	5975	0.14	0.35
Eastern Region dummy	5975	0.11	0.31
Volta Region dummy	5975	0.14	0.34
Ashanti Region dummy	5975	0.18	0.38
Brong-Ahafo Region (dummy)	5975	0.09	0.29
Northern Region dummy	5975	0.06	0.24
Upper West Region dummy	5975	0.02	0.14
Upper East Region dummy	5975	0.04	0.20

Table 50: Continued …

Variable description	Number of observations	Mean	Standard deviation
Urban remitter is head's parent (dummy)	1767	0.06	0.24
Urban remitter is head's spouse (dummy)	1767	0.09	0.28
Urban remitter is head's child (dummy)	1767	0.35	0.48
Urban remitter is head's sibling (dummy)	1767	0.23	0.42
Urban remitter is head's other rel (dummy)	1767	0.17	0.37
Urban remitter not related to head (dummy)	1767	0.10	0.30
urban remitter is a male (dummy)	1765	0.62	0.49
Rural remitter is head's parent (dummy)	418	0.14	0.35
Rural remitter is head's spouse (dummy)	418	0.08	0.28
Rural remitter is head's child (dummy)	418	0.33	0.47
Rural remitter is head's sibling (dummy)	418	0.25	0.43
Rural remitter is head's other rel (dummy)	418	0.15	0.36
Rural remitter not related to head (dummy)	418	0.06	0.23
Rural remitter is a male (dummy)	416	0.53	0.50
Sent remittance to rural sector (dummy)	5975	0.20	0.40
Sent remittance to urban sector (dummy)	5975	0.28	0.45
Household size	5975	4.28	2.56
Number of children/elderly	5975	2.08	1.77
Member attends school (dummy)	5975	0.61	0.49
Household kin-fosters (dummy)	5975	0.17	0.38
Log of U-R remittance outflow	1172	11.45	1.34
Log of R-U remittance outflow	1688	11.70	1.36
Log of U-R remittance receipts	1775	11.87	1.47
Log of R-U remittance receipts	421	11.07	1.37
Rural recipient is head's parent (dummy)	1150	0.36	0.48
Rural recipient is head's spouse (dummy)	1150	0.05	0.22
Rural recipient is head's child (dummy)	1150	0.15	0.36
Rural recipient is head's sibling (dummy)	1150	0.16	0.36
Rural recipient is head's other relative (dummy)	1150	0.23	0.42
Rural recipient not related to head (dummy)	1150	0.05	0.22
Rural recipient is a male (dummy)	1151	0.30	0.46
Urban recipient is head's parent (dummy)	1661	0.25	0.43
Urban recipient is head's spouse (dummy)	1661	0.03	0.17
Urban recipient is head's child (dummy)	1661	0.30	0.46
Urban recipient is head's sibling (dummy)	1661	0.19	0.39
Urban recipient is head's other relative (dummy)	1661	0.18	0.38
Urban recipient not related to head (dummy)	1661	0.05	0.23
Urban recipient is a male (dummy)	1658	0.37	0.48
Received urban remittance (dummy)	5975	0.30	0.46
Received rural remittance (dummy)	5975	0.07	0.26

7.4.2 Factors influencing urban-to-rural remittance outflows

a) The urban-to-rural remittance outflow decision

The probit estimates (see Table 51) highlight the strong linkage between remittance outflows and migration; the presence of a rural-to-urban in-migrant increases the likelihood of the (urban) household sending remittances to the rural sector. The coefficient of the proxy for this linkage is highly significant (the p-value is less than 0.01), lending considerable support to the existence of a strong connection between migration and remittances. Our results further suggest that relative to urban households with no employment income, urban households in the medium employment income category are more likely to send remittances to rural residents. Somewhat surprisingly, the coefficient of the high employment income dummy was small and lacked statistical significance.

The probit results further show that all else being equal, the receipt of remittances from the rural sector increases an urban household's likelihood of sending remittances to that (i.e., rural) sector. This result could also be an indication that the receipt of an urban remittance increases a rural household's probability of sending remittances to the urban sector. This is because the nature of the data precludes a clear determination of the sequencing of the two kinds of transfers. This point is buttressed by the results of the rural-to-urban remittance outflow model (see Table 52). At any rate, this finding is suggestive of the presence of exchange (or self-interest) considerations in the motivation for remittance flows between Ghana's urban and rural areas. This is because the finding is consistent with the view that remittances are often sent as a strategic ploy for receiving reciprocal remittances.

A number of other findings also conform to a priori expectations. Compared with households headed by persons aged 65 years or more, urban households headed by persons in the age groups, 25-35, 35-45, and 45-55 are each more likely to send remittances to rural households. Furthermore, male headship of an urban household increases the household's likelihood of sending remittances to the rural sector. We also find a significant role – in the remittance decision – for the household head's marital

status. In comparison with the headship of an urban household by a person who has never married, the headship of an urban household by a married person increases the household's likelihood of sending remittances to a rural household. The headship of an urban household by a person divorced/separated, or by a widow(er), has a similar effect.

The household head's employment status also exerts an influence on the urban household's likelihood of sending remittances to the rural sector. Compared to an urban household headed by the unemployed, the headship of an urban household by an agricultural, industrial, or services sector worker raises the chances of the household sending remittances to a rural dweller. These findings also conform to a priori expectations.

Table 51: Urban-to-rural remittance outflow

Dependent variables:
Probit - dummy (1 if urban-to-rural remitter, 0 if urban non-remitter);
Adjusted-OLS – Log of urban-to-rural remittances sent;
Tobit – Urban-to-rural remittances ('000 cedis) sent

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
R-U in-migrant present	**0.69*** **	**(0.11)**			**270.15*** **	**(47.58)**
Male head	0.37***	(0.10)	0.34*	(0.20)	181.73***	(47.10)
Low employment income	-0.10	(0.15)	-0.27	(0.25)	-77.66	(69.27)
Medium employment income	0.29**	(0.13)	0.13	(0.20)	105.79*	(57.62)
High employment income	0.08	(0.13)	0.23	(0.19)	61.17	(53.87)
Zero employment income (omitted category)						
Household size	-0.02	(0.02)	-0.06*	(0.03)	-13.29	(9.23)
Received rural remittance	0.36**	(0.18)	-0.78***	(0.27)	79.41	(79.95)
Household kin-fosters	0.15	(0.12)	0.49**	(0.20)	85.15	(52.67)
Head's age:[15, 25)	0.25	(0.27)	-0.06	(0.53)	56.94	(122.23)
Head's age:[25, 35)	0.51***	(0.17)	0.06	(0.32)	198.14**	(77.28)
Head's age:[35, 45)	0.64***	(0.16)	0.10	(0.31)	264.52***	(71.69)
Head's age:[45, 55)	0.52***	(0.16)	0.33	(0.30)	233.78***	(72.41)
Head's age:[55, 65)	0.18	(0.17)	-0.12	(0.31)	51.53	(78.24)
Head's age≥65 (omitted category)						
Head married	0.52***	(0.17)	-0.04	(0.32)	210.62***	(73.56)
Head in informal union	-0.05	(0.19)	-0.47	(0.35)	-55.56	(85.25)
Head divorced/separated	0.40**	(0.19)	-0.05	(0.34)	149.35*	(82.79)
Head widowed	0.39*	(0.23)	-0.36	(0.44)	139.21	(102.82)
Head never married (omitted category)						
Head-agric.	0.28*	(0.16)	-0.26	(0.32)	122.96	(74.96)
Head-industry	0.45***	(0.16)	0.08	(0.32)	200.37***	(72.42)
Head-services	0.32**	(0.15)	0.17	(0.30)	168.03**	(67.90)
Head unemployed (omitted category)						
Forest ecological zone	0.13	(0.15)	-0.21	(0.24)	60.81	(66.46)
Savannah ecological zone	-0.29	(0.24)	-0.13	(0.45)	-126.62	(107.96)
Coastal ecological zone (omitted category)						

Table 51: Continued …

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Western Region	0.04	(0.53)	0.46	(0.88)	22.28	(247.28)
Central Region	-0.45	(0.54)	-0.07	(0.91)	-165.43	(251.43)
Greater Accra Region	-0.21	(0.53)	1.26	(0.88)	27.49	(246.21)
Eastern Region	-0.25	(0.52)	0.92	(0.84)	-66.75	(240.64)
Volta Region	-0.15	(0.53)	0.69	(0.87)	-9.39	(243.76)
Ashanti Region	-0.18	(0.52)	1.06	(0.85)	7.67	(242.98)
Brong-Ahafo Region	-0.29	(0.52)	1.03	(0.83)	-71.16	(240.56)
Northern Region	-0.15	(0.50)	1.09	(0.82)	11.26	(233.90)
Upper West Region	-0.43	(0.74)	-0.24	(1.30)	-168.90	(349.76)
Upper East Region (omitted category)						
No. of rural recipients			0.49***	(0.09)		
Selectivity			0.07	(0.30)		
Constant	-2.14***	(0.58)	10.04***	(1.27)	-1024.56***	(273.21)
sigma					463.36***	(21.55)
r2			0.38			
r2_a			0.30			
F			5.02			
chi2	189.36				189.36	
N	1559.00		297.00		1559.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

b) Factors influencing the amount of urban-to-rural remittances sent

In the selectivity-corrected OLS regression for the amount of remittances sent, our exclusion restriction is the variable for the presence of a rural-to-urban in-migrant (see Table 51). As shown in the test of the validity of this variable as an exclusion restriction (see Table 63), the coefficient of the variable is not statistically significant when included in the OLS regression, but is highly significant (as already seen) in the probit.

The selectivity-adjusted regression estimates are consistent with the view that gender plays a role in remittances outflows. The headship of an urban household by a male tends to increase the amount of remittances the household transfers to the rural sector. In other words, compared to their female-headed counterparts, male-headed urban households tend to send larger amounts of remittances to rural residents, all other things being equal. Significantly, the gender dummy is the only regressor for which the corresponding coefficients in the probit, adjusted-OLS, and Tobit are all significant and have the same sign. In view of the fact that within the Ghanaian society, greater responsibility is placed on men, the performance of the gender dummy is consistent with a priori expectations.

For the sample of urban households that sent remittances to the rural sector, those who received rural remittances sent smaller amounts – on average – to the rural sector. This result is apparently simply reflecting the fact that urban recipients of rural remittances have, on average, lower employment incomes and welfare than their counterparts who do not receive rural remittances. Our results further suggest that the greater the number of rural dwellers an urban household sends remittances to, the higher the total amount of remittances sent by the household. Furthermore, in comparison with their non-kin-fostering counterparts, urban households that engage in kin-fostering tend to transfer larger amounts of remittances to the rural sector. This finding is plausible since kin-fostered individuals might be sending remittances to their rural resident parents or relatives.

At this juncture, it is pertinent to note that the coefficients in the adjusted-OLS regression do not always have the same sign as the corresponding estimates in the probit regression. This point highlights the comment made about the use of Tobit models in

remittance analyses. Whereas the Tobit estimates do not distinguish between factors influencing the remittance decision and those influencing the remittance size, the Heckman-type models do. Thus, the selectivity-adjusted models offer the potential for gaining more insight into remittance flows.

7.4.3 Factors influencing rural-to-urban remittance outflows

a) The rural-to-urban remittance outflow decision

The probit regression estimates (see Table 52) suggest that the presence of an urban-to-rural in-migrant increases the likelihood of the rural household sending remittances to the urban sector. In addition to being similar to the finding in the urban-to-rural outflow model, the result lends credence to the notion that remittances are strongly linked to migration.

Male headship of a rural household also increases the household's probability of sending remittances to an urban resident. In the Ghanaian society, where leadership roles are culturally assigned to males, this finding is not surprising. Thus, in comparison with their female-headed counterparts, male-headed households are likely to have a greater obligation to send remittances. Again, this finding mirrors that of the urban-to-rural outflow model.

The coefficients of the dummy variables for "low employment income" and "high employment income" are positive and highly significant. Thus, in comparison with households without employment income, both low- and high-earning rural households are more likely to send remittances to the urban sector. This result also conforms to a priori expectations. Another result worth noting is the performance of the variable representing a household's status regarding the receipt of remittances from the urban sector. In comparison with rural households who do not receive urban remittances, rural households who do receive such remittances are more likely to transfer remittances to the urban sector. This finding supports the exchange (or self-interest) explanation for the motivation underlying remittance transfers.

Table 52: Rural-to-urban remittance outflow model

Dependent variables:
Probit - dummy (1 if rural-to-urban remitter, 0 if rural non-remitter);
Adjusted-OLS – Log of rural-to-urban remittances sent;
Tobit – Rural-to-urban remittances (‘000 cedis) sent

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
U-R in-migrant present	**0.12***	**(0.07)**			**86.24*****	**(25.96)**
Male head	**0.28*****	**(0.06)**			**92.93*****	**(24.19)**
Low employment income	0.27***	(0.10)	-0.20	(0.15)	80.37**	(38.16)
Medium employment income	0.17	(0.13)	0.01	(0.18)	58.14	(48.62)
High employment income	0.63***	(0.15)	0.07	(0.25)	308.64***	(52.62)
Zero employment income (omitted category)						
Household size	0.01	(0.01)	0.02	(0.02)	3.01	(4.18)
Received urban remittance	0.40***	(0.06)	-0.69***	(0.12)	84.24***	(21.07)
Head's age:[15, 25)	-0.17	(0.15)	0.12	(0.26)	-81.65	(60.41)
Head's age:[25, 35)	0.15	(0.09)	0.12	(0.15)	23.95	(36.59)
Head's age:[35, 45)	0.28***	(0.09)	-0.02	(0.15)	85.06**	(34.66)
Head's age:[45, 55)	0.28***	(0.09)	-0.04	(0.15)	112.49***	(34.98)
Head's age:[55, 65)	0.13	(0.09)	-0.07	(0.14)	49.44	(36.36)
Head’s age≥65 (omitted category)						
Head-MSLC/BECE	0.13**	(0.06)	0.16	(0.10)	60.95**	(23.69)
Head-voc/comm/O/A	0.25*	(0.14)	-0.04	(0.20)	71.44	(53.00)
Head-TT/nursing/tech/prof	0.40**	(0.16)	-0.04	(0.22)	131.99**	(56.00)
Head-degree	0.55	(0.47)	0.08	(0.52)	261.06*	(154.51)
Head-unspec. educ	-0.02	(0.42)	0.09	(0.56)	78.48	(151.96)
Head-no educ qualification (omitted category)						
Head-agric.	0.59***	(0.17)	-0.97***	(0.36)	158.93**	(67.00)
Head-industry	0.46**	(0.19)	-0.89**	(0.37)	113.26	(74.44)
Head-services	0.44**	(0.18)	-0.84**	(0.34)	153.86**	(69.48)
Head-other			0.00	(0.00)	-1980.25	(0.00)
Head unemployed (omitted category)						
Farm/livestock	0.30***	(0.11)	-0.33*	(0.18)	133.24***	(40.42)
Food processing	0.04	(0.07)	0.07	(0.10)	15.03	(25.72)
Other business	0.23***	(0.06)	-0.21**	(0.10)	67.70***	(21.16)

Table 52: Continued …

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Pipe-borne water	-0.28***	(0.08)	0.12	(0.14)	-112.47***	(30.26)
Electricity/generator	0.26***	(0.08)	-0.04	(0.13)	119.42***	(30.12)
Forest ecological zone	0.48***	(0.08)	-0.24	(0.17)	131.17***	(28.97)
Savannah ecological zone	0.08	(0.12)	-0.02	(0.19)	-17.42	(46.92)
Coastal ecological zone (omitted category)						
Western Region	1.07***	(0.19)	0.14	(0.49)	355.23***	(77.38)
Central Region	1.28***	(0.19)	-0.05	(0.52)	438.82***	(76.71)
Greater Accra Region	1.42***	(0.22)	0.36	(0.59)	564.98***	(89.16)
Eastern Region	0.86***	(0.17)	0.05	(0.43)	317.91***	(70.16)
Volta Region	1.07***	(0.18)	0.04	(0.48)	379.94***	(74.41)
Ashanti Region	0.86***	(0.18)	0.69	(0.44)	381.50***	(74.92)
Brong-Ahafo Region	0.71***	(0.17)	0.67	(0.42)	295.73***	(70.86)
Northern Region	0.44**	(0.17)	0.58	(0.40)	187.76***	(72.22)
Upper West Region			0.00	(0.00)	-2041.70	(0.00)
Upper East Region (omitted category)						
Rec is head's parent			0.65***	(0.21)		
Rec is head's spouse			1.54***	(0.28)		
Rec is head's child			0.90***	(0.20)		
Rec is head's sibling			0.27	(0.21)		
Rec is head's other rel			0.21	(0.21)		
Rec not related to head (omitted category)						
No. of urban recipients			0.48***	(0.04)		
Selectivity			-1.03**	(0.40)		
Constant	-3.25***	(0.26)	12.46***	(1.31)	-1178.07***	(105.45)
sigma					415.01***	(10.12)
r2			0.35			
r2_a			0.32			
F			12.33			
chi2	542.95				583.03	
N	3044.00		977.00		3139.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

We also find that in comparison with households headed by the elderly (aged 65 years or more), rural households headed by persons aged between 35 and 55 years are more likely to transfer remittances to an urban resident. Given the link between age and income generating capacity, this finding is plausible. Furthermore, support is found for the influence of education in remittance decisions. In relation to rural households headed by persons with no educational qualification, those headed by individuals with basic to moderate[72] education have a higher probability of sending remittances to the urban sector.

Our results further suggest a strong impact of employment status on rural households' decisions to send remittances to the urban sector. Compared with rural households headed by the unemployed, those headed by agricultural, industrial, or services sector workers are more likely to send remittances to urban residents. This result clearly conforms to a priori expectations. Furthermore, ceteris paribus, rural households who own (or operate) a farm, keep livestock, or are engaged in fishing, have a greater likelihood of sending remittances to the urban sector. No such evidence is found for rural households engaged in food processing, but similar results hold for those involved in some other non-farm business (see the probit estimates in Table 52).

The probit results further suggest that rural households with access to pipe-borne water are less likely to transfer remittances to urban residents, but those who use electricity–powered lighting are more likely to do so. Given the expected strong association between wellbeing and access to these amenities, the latter result is consistent with a priori expectation, whilst the former requires further investigation. The statistical significance and positive signs of most of the regional dummies suggest the presence of unobserved spatial effects that result in the following: in comparison with rural households in the Upper East Region (the omitted category), rural households in virtually[73] all other Regions are more likely to transfer remittances to urban residents,

[72] That is, any of the following qualifications: vocational, commercial, "O" level, "A" level, teacher training, nursing, technical, or professional.
[73] The dummy for one Region (the Upper West) was dropped during the estimation process. This was because no rural household from the Region sent a remittance to an urban resident.

ceteris paribus. This finding is also consistent with the Upper East Region's status as one of the poorest in Ghana.

b) Factors influencing the amount of rural-to-urban remittances sent

The relevant estimates for this discussion are those of the adjusted-OLS regression in Table 52. As indicated by the highlighted variables, the exclusion restrictions for this regression are the dummies for gender and the presence of an urban-to-rural in-migrant. The test for the validity of these identifying variables is provided by Table 64.

We observe that the receipt of remittances from the urban sector is associated with a lower amount of remittances sent to that sector. This result is consistent with the fact that rural households who receive urban remittances have a lower mean employment income than their colleagues who do not receive such remittances.

We further find that the larger the number of urban residents a rural household sends remittances to, the greater the total amount of remittances sent to the urban sector. Additionally, the relationship of the major recipient to the head of the remitting household influences the size of remittances transferred. In comparison with the amounts sent to non-relatives living in urban areas, rural households sent higher amounts of remittances to urban-based parents, spouses, or children. This finding is very consistent with a priori expectations.

For the sample of rural households who sent remittances to urban residents, households whose heads work in the agricultural, industrial, or services sectors sent smaller amounts of remittances, that is, compared to those whose household heads are unemployed. Similarly, for the sample of remitters, those who own (or operate) a farm, keep livestock, or are engaged in fishing, tend to send smaller remittances to the urban sector; similar results were found for those involved in some other non-farm business
The reasons underlying these results are not easily discernible and would require additional research and information to unravel.

The coefficient of the selectivity variable is statistically significant and negative. This finding calls for a couple of comments. First of all, the statistical significance of the

coefficient lends support to our choice of the Heckman selectivity-adjusted model. Secondly, the negative sign of the coefficient suggests the presence of unobserved variable(s) which exert contrasting effects on the remittance decision and the amount of remittances sent. While it is difficult to know exactly what these unobserved variables are, it is plausible that a household's average geographical distance from relatives is one such variable. This is because conceivably, households who are geographically closer to relatives are more likely to send remittances, whereas amongst remittance sending households, those who are located farther from relatives are more prone to send larger amounts of remittances. This is a phenomenon many developing country residents can identify with.

7.4.4 Factors influencing urban-to-rural remittance receipts

a) Factors influencing rural households' receipt of urban remittances

All else being equal, male headship of a rural household reduces the likelihood of the household receiving transfers from the urban sector. In other words, female headship of a rural household increases that household's probability of receiving urban remittances (see Table 53). We also observe that the presence of a school pupil (or college student) in a rural household increases the household's probability of receiving urban remittances, a result which is consistent with both altruism and exchange. This second finding further provides insight into the use of remittances by rural households. It is reasonable to speculate – on the basis of the results – that urban transfers to rural households are often (meant to be) used to finance educational expenses. We also find that rural households' transfer of remittances to the urban sector enhances their likelihood of receiving remittances from urban households. Thus, the exchange (or self-interest) motive cannot be ruled out either. It does appear then, that both altruistic and exchange motivations underlie remittance behaviour in Ghana.

Regarding the role of kin-fostering, our results are consistent with the view that they influence the receipt of remittances. The coefficient of the kin-fostering variable is positive and statistically significant, suggesting that kin-fostering enhances a rural household's probability of receiving remittances from the urban sector. In Ghana, a

rural-to-urban in-migrant might have a child living with a rural-based relative (for example, the migrant's parent) as a livelihood coping strategy. This scenario will naturally increase the kin-fostering household's likelihood of receiving remittances from the urban-based migrant. Furthermore, in comparison with households headed by the elderly (65 years or older), rural households headed by the non-elderly have a lower probability of receiving remittances from the urban sector. Given that in typical developing countries the elderly tend to be very needy, this result is consistent with the existence of altruistic conduct on the part of urban households who send remittances to rural dwellers.

Table 53: Urban-to-rural remittance receipt model

Dependent variables:
Probit - dummy (1 if recipient of urban-to-rural remittance, 0 if rural non-recipient);
Adjusted-OLS – Log of urban-to-rural remittances received;
Tobit – Urban-to-rural remittances ('000 cedis) received

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Male head	**-0.57*** **	**(0.07)**			**-357.44*** **	**(35.89)**
Zero employment income	0.03	(0.14)	-0.07	(0.22)	51.10	(76.31)
Low employment income	0.05	(0.16)	0.02	(0.25)	32.74	(86.09)
Medium employment income	-0.05	(0.17)	-0.16	(0.27)	-17.35	(90.23)
High employment income (omitted category)						
Sent rem to urban sector	0.43***	(0.05)	-0.33***	(0.10)	177.16***	(29.32)
Household kin-fosters	0.12*	(0.07)	-0.14	(0.10)	26.77	(35.41)
# of children/elderly	-0.02	(0.02)	0.04*	(0.03)	-2.64	(8.92)
Member attends school	0.13**	(0.06)	0.18*	(0.09)	75.70**	(32.83)
Head's age:[15, 25)	-0.54***	(0.15)	0.49**	(0.23)	-171.19**	(79.09)
Head's age:[25, 35)	-0.68***	(0.09)	0.39**	(0.17)	-299.39***	(49.14)
Head's age:[35, 45)	-0.77***	(0.09)	0.19	(0.18)	-330.12***	(46.41)
Head's age:[45, 55)	-0.70***	(0.08)	0.27*	(0.16)	-334.52***	(45.28)
Head's age:[55, 65)	-0.45***	(0.09)	0.04	(0.13)	-197.31***	(44.47)
Head's age≥65 (omitted category)						
Head married	-0.26**	(0.12)	-0.19	(0.20)	-92.35	(67.49)
Head in informal union	-0.16	(0.13)	-0.44**	(0.19)	-60.80	(68.74)
Head divorced/separated	-0.34**	(0.13)	-0.05	(0.20)	-142.80*	(73.00)
Head widowed	-0.27*	(0.15)	-0.22	(0.21)	-171.98**	(79.05)
Head never married (omitted category)						
Head-MSLC/BECE	0.11*	(0.06)	0.09	(0.09)	71.86**	(32.42)
Head-voc/comm/O/A	0.05	(0.14)	0.54***	(0.20)	67.75	(73.37)
Head-TT/nursing/tech/prof	-0.10	(0.16)	1.02***	(0.25)	44.33	(85.03)
Head-degree	0.24	(0.45)	-1.14	(0.84)	206.56	(244.57)
Head-unspec. educ	-0.70	(0.47)	0.37	(0.83)	-363.30	(269.34)
Head-no educ qualification (omitted category)						

Table 53: Continued …

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Head-agric.	-0.47***	(0.14)	-0.20	(0.18)	-372.96***	(67.38)
Head-industry	-0.78***	(0.16)	-0.20	(0.25)	-546.28***	(81.24)
Head-services	-0.52***	(0.15)	-0.16	(0.18)	-379.55***	(70.57)
Head-other			0.00	(0.00)	-143.21	(594.50)
Head unemployed (omitted category)						
Farm/livestock	-0.08	(0.09)	-0.06	(0.14)	-4.41	(49.95)
Food processing	-0.14**	(0.06)	0.04	(0.09)	-63.86*	(33.33)
Other business	-0.09*	(0.05)	-0.07	(0.08)	-48.09*	(28.65)
Pipe-borne water	-0.13*	(0.07)	0.15	(0.10)	-27.47	(38.29)
Electricity/generator	0.21***	(0.07)	0.13	(0.11)	186.83***	(39.07)
Forest ecological zone	0.00	(0.07)	-0.17	(0.11)	-1.58	(38.63)
Savannah ecological zone	-0.19*	(0.11)	-0.48***	(0.18)	-123.83**	(61.76)
Coastal ecological zone (omitted category)						
Western Region	-0.72***	(0.16)	-0.31	(0.28)	-352.00***	(88.89)
Central Region	-0.29*	(0.16)	-0.51**	(0.24)	-201.40**	(87.26)
Greater Accra Region	-0.21	(0.19)	0.30	(0.28)	179.92*	(101.87)
Eastern Region	-0.45***	(0.14)	-0.15	(0.23)	-239.59***	(77.78)
Volta Region	-0.27*	(0.15)	-0.52**	(0.24)	-181.44**	(83.66)
Ashanti Region	-0.43***	(0.15)	0.13	(0.24)	-169.32**	(84.83)
Brong-Ahafo Region	-0.36***	(0.14)	0.23	(0.21)	-178.84**	(75.20)
Northern Region	-0.32**	(0.14)	0.25	(0.23)	-153.27**	(76.52)
Upper West Region	-1.15***	(0.22)	-0.18	(0.47)	-548.53***	(126.66)
Upper East Region (omitted category)						
Rem is head's parent			0.58***	(0.20)		
Rem is head's spouse			1.51***	(0.19)		
Rem is head's child			0.59***	(0.15)		
Rem is head's sibling			0.30**	(0.14)		
Rem is head's other rel			0.06	(0.15)		
Rem not related to head (omitted category)						
Urban remitter is a male			0.23***	(0.07)		
No. of urban remitters			0.53***	(0.04)		
Selectivity			-0.62**	(0.25)		

Table 53: Continued …

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Constant	1.63***	(0.28)	11.21***	(0.42)	711.72***	(149.02)
sigma					581.20***	(12.94)
r2			0.36			
r2_a			0.34			
F			13.05			
chi2	500.91				526.40	
N	3422.00		1139.00		3423.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Compared with rural households headed by persons who have never been married, rural households headed by the married, the divorced (or separated), or the widowed are each less likely to receive remittances from the urban sector. The exact explanation for this finding is unclear and might require further research, possibly with additional data. We also observe that in comparison with rural households headed by the unemployed, rural households headed by agricultural, industrial, or services sector workers are each less likely to receive remittances from the urban sector, another finding that conforms to a priori expectations. Finally, the estimates suggest that owing to unobserved regional differences, rural households in the Upper East Region are more likely – relative to their counterparts in most of the other Regions – to receive urban remittances, ceteris paribus.

b) Factors influencing the amount of urban-to-rural remittances received

The regression for the amount of remittances received is represented by the adjusted-OLS estimates. As shown in Table 65, although the exclusion restriction (the gender dummy) is statistically significant in the remittance decision equation, it lacks significance when it is included in the adjusted-OLS regression. Additionally, it is useful to note that these selectivity-corrected OLS estimates are based on a sample of rural recipients of urban remittances.

The adjusted-OLS estimates suggest that all other things being equal, the higher the number of children (less than 15 years old) and the elderly (more than 65 years old) present in a rural household, the larger the amount of urban remittances the household will receive (see Table 53). Our results also suggest that the presence of a school pupil (or college student) tends to increase the size of urban remittances received. Furthermore, amongst rural recipients of urban remittances, there is a relationship between the amount of remittances received and the status of the rural household regarding whether it sends remittances to the urban sector. Rural households who do not send remittances to the urban sector tend to receive larger urban transfers. To the extent that failure to send remittances to the urban sector might be a reflection of deprivation, this result is again consistent with the altruistic motive for remittance flows.

Amongst rural recipients of urban remittances, households headed by persons in some non-elderly age groups receive larger amounts than households headed by the elderly. It

would be recalled that the probit model predicts the opposite effect of household head's age on the receipt of urban remittances (see Table 53). These contrasting effects show that factors influencing the two remittance decisions – the decision to remit and the decision about the remittance size – can impact differently. Furthermore, in comparison with rural households headed by persons without any educational qualification, rural households whose heads have a moderate educational qualification[74] tend to receive larger urban remittances.

Regarding the influence of the number of remitters on remittance size, there is support for a positive effect; amongst rural recipients of urban remittances, there is a positive association between the size of remittances received and the number of urban remitters the recipient household has. We also find that rural recipients of urban remittances tend to receive larger amounts if the major remitter is a parent, a spouse, a child, or a sibling of the household head, that is, in comparison with those cases where the major remitter is not related to the household head; this is also a plausible finding.

It is important to note also that the coefficient of the selectivity variable is negative and statistically significant, with the p-value being less than 0.05. In addition to the coefficient's statistical significance providing credibility to the methodology employed, the negative sign of the coefficient offers interesting insight into remittance flows in Ghana. The negative sign of the selectivity variable suggests that unobserved variable(s) influencing rural households' receipt of urban remittances have an opposite effect on the size of urban remittances received by the households. As suggested earlier in this chapter, a likely candidate for such a variable is a rural household's average proximity to potential remitters (for example, relatives of household members). The closer the location of potential urban remitters, the higher will be the probability that the rural households will receive urban remittances. However, amongst rural households who receive urban remittances, those with geographically closer remitters are more likely to receive smaller amounts of remittances.

[74] That is, any of the following qualifications: vocational, commercial, "O" level, "A" level, teacher training, nursing, technical, or professional.

7.4.5 Factors influencing rural-to-urban remittance receipts

a) Factors influencing urban households' receipt of rural remittances

The results of the probit and selectivity-adjusted OLS regressions are shown in Table 54. Regarding the adjusted-OLS regression, the exclusion restriction is the gender dummy; a test of the validity of this exclusion restriction is provided by Table 66. Our probit estimates provide support for a close link between remittances and migration. This is shown by the positive and significant coefficient of the dummy for the presence of a rural-to-urban in-migrant. Thus, the presence of a rural-to-urban in-migrant in an urban household increases the household's probability of receiving remittances from the rural sector. Furthermore, our results suggest that urban households who send remittances to the rural sector are more likely to receive rural remittances, that is, in comparison with those who do not send remittances to rural dwellers.

The negative and highly significant coefficient of the dummy variable for male household headship provides support for the view that female headship of an urban household increases the household's probability of receiving rural remittances. This finding mirrors that of the urban-to-rural remittance inflow model. There is also some evidence for the influence of employment status in remittance receipts. Urban households whose heads are unemployed have a higher probability of receiving rural remittances than their counterparts whose heads are employed in industry or in services. Thus, the importance of altruistic considerations is given additional credence.

Another notable finding relates to the role of kin-fostering in remittance flows. The coefficient of the kin-fostering variable is positive and statistically significant, thus providing evidence to suggest that kin-fostering influences remittance flows. Our results suggest that kin-fostering by an urban household tends to increase the likelihood of the household receiving remittances from the rural sector. This finding is consistent with scenarios where very young rural-to-urban in-migrants are kin-fostered by urban-based relatives. Under such circumstances, the urban household is more likely to receive remittances from the rural sector.

Table 54: Rural-to-urban remittance receipt model

Dependent variables:
Probit - dummy (1 if recipient of rural-to-urban remittance, 0 if urban non-recipient);
Adjusted-OLS – Log of rural-to-urban remittances received;
Tobit – Rural-to-urban remittances (‘000 cedis) received

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Male head	**-0.62*** **	**(0.14)**			**-465.62*** **	**(102.89)**
R-U in-migrant present	0.49***	(0.16)	-1.08**	(0.53)	347.53***	(118.80)
Zero employment income	-0.16	(0.20)	-0.82	(0.57)	-88.56	(145.90)
Low employment income	0.06	(0.26)	-0.80	(0.69)	0.45	(191.79)
Medium employment income	-0.38	(0.30)	-1.46	(1.01)	-279.12	(224.39)
High employment income (omitted category)						
Sent rem to rural sector	0.39**	(0.15)	-0.08	(0.43)	249.86**	(113.08)
Household kin-fosters	0.27*	(0.15)	-0.77*	(0.40)	209.53*	(108.68)
Head's age:[15, 25)	-0.33	(0.30)	0.29	(0.66)	-229.19	(219.76)
Head's age:[25, 35)	-0.59***	(0.21)	1.09*	(0.61)	-330.67**	(154.59)
Head's age:[35, 45)	-0.49**	(0.20)	0.10	(0.60)	-301.17**	(147.18)
Head's age:[45, 55)	-0.59***	(0.21)	0.80	(0.60)	-266.79*	(150.99)
Head's age:[55, 65)	-0.54**	(0.23)	0.15	(0.58)	-360.88**	(172.39)
Head’s age≥65 (omitted category)						
Head-agric.	-0.31	(0.23)	0.12	(0.54)	-345.01**	(158.31)
Head-industry	-0.68***	(0.24)	-0.37	(0.80)	-603.09***	(177.67)
Head-services	-0.52**	(0.21)	0.63	(0.58)	-488.76***	(146.05)
Head-other			0.00	(0.00)	-3342.94	(0.00)
Head unemployed (omitted category)						
Pipe-borne water	-0.38**	(0.16)	0.65	(0.45)	-219.51*	(116.85)
Electricity/generator	-0.01	(0.16)	0.63	(0.40)	54.91	(113.85)
Forest ecological zone	-0.10	(0.23)	1.15*	(0.61)	10.93	(165.24)
Savannah ecological zone	-0.86**	(0.40)	-0.27	(1.20)	-555.38*	(298.82)
Coastal ecological zone (omitted category)						
Western Region	-0.99	(0.69)	-5.14**	(1.93)	-944.29*	(489.22)
Central Region	-0.78	(0.70)	-3.14	(1.90)	-656.35	(489.75)
Greater Accra Region	-1.21*	(0.69)	-2.09	(1.90)	-992.87**	(487.17)

Table 54: Continued …

	(1) Probit		(2) Adjusted-OLS		(3) Tobit	
Eastern Region	-0.87	(0.67)	-1.86	(1.82)	-738.75	(468.83)
Volta Region	-0.45	(0.66)	-4.44**	(1.79)	-560.28	(461.97)
Ashanti Region	-0.80	(0.67)	-3.07	(1.89)	-732.59	(472.17)
Brong-Ahafo Region	-0.47	(0.67)	-4.40**	(1.87)	-633.07	(468.03)
Northern Region	-0.33	(0.61)	-1.13	(1.61)	-391.95	(420.27)
Upper West Region			0.00	(0.00)	-3770.26	(0.00)
Upper East Region (omitted category)						
No. of rural remitters			0.62**	(0.27)		
Selectivity			-1.57**	(0.71)		
Constant	0.90	(0.75)	15.93***	(1.90)	673.71	(523.81)
sigma					733.23***	(64.53)
r2			0.54			
r2_a			0.32			
F			2.41			
chi2	116.52				113.48	
N	1384.00		86.00		1401.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Furthermore, in comparison with urban households headed by the elderly (aged 65 years or more), those headed by the non-elderly are generally less likely to receive remittances from the rural sector; this constitutes another plausible result. An urban household's access to pipe-borne water also decreases its likelihood of receiving rural remittances. To the extent that access to pipe-borne water can reflect a desirable level of wellbeing, this finding is reasonable.

b) Factors influencing the amount of rural remittances received by urban households

Many of the regressors in the selectivity-adjusted OLS equation do not have significant coefficients (see Table 54). The p-value associated with the joint statistical significance of the model is, however, less than 0.01. A possible reason for the lack of significance of many of the coefficients is the small number of observations available; only 86 urban households received remittances from the rural sector, whereas the number of urban households who did not receive remittances is 1,315.

Our results suggest that for those urban households who received rural remittances, the household head's age has some influence on the amount of remittances received. In comparison with households headed by the elderly (aged 65 years or more), households headed by persons in the 25-35 year range tend to receive larger amounts of rural remittances. There is also some evidence to suggest that amongst urban recipients of rural remittances, the presence of a rural-to-urban in-migrant decreases the size of rural remittances received; a similar result applies to the presence of a kin-fostered child.

Additionally, for those urban households receiving rural remittances, the higher the number of rural remitters a household has, the larger the total amount of remittances received from the rural sector – a very reasonable result. It should be noted also that the coefficient of the selectivity variable is negative and statistically significant, a finding that adds support to the use of the selectivity-adjusted model. As noted earlier in comments about similar findings, the negative sign of the selectivity variable is plausible and interesting. It reflects the conceivably constrasting influence of unobserved variables – such as the geographical closeness of households' potential remitters – on remittance receipt and remittance size.

7.4.6 Impact of urban-to-rural remittances on the welfare of recipients

Table 55 shows the selectivity-corrected OLS welfare regressions used in the estimation of the counterfactual scenarios. The regression labelled "Welf1" represents the set of parameter estimates used to compute the recipient welfare levels for those rural households who did not receive remittances. The regression labelled "Welf0", on the other hand, represents the set of parameter estimates employed in the computation of non-recipient welfare levels for those rural households who received remittances from the urban sector. The explanatory variables in both regressions include measures of – or proxies for – human capital, physical assets, household characteristics, community characteristics, income-generating capacity, and location. On the whole, the signs and significance of the coefficients are consistent with a priori expectations. On the basis of the values of the adjusted-R-squared (r2_a), F-statistic, and root of mean square error ("rmse"), the models perform reasonably well. The identifying variable (i.e., the exclusion restriction) for each of the welfare regressions is one of the household head age dummies – the dummy for age group 35-45 years. The test of the validity of the exclusion restriction is provided by Table 67.

Table 55: Recipient (Welf1) and non-recipient (Welf0) welfare regressions, together with first-stage Probit: urban-to-rural model

Dependent variable: Log of welfare

	(1) Probit		(2) Welf1		(3) Welf0	
Head's age:[15, 25)	-0.34**	(0.16)	0.02	(0.10)	-0.01	(0.07)
Head's age:[25, 35)	-0.50***	(0.11)	-0.00	(0.05)	0.04	(0.03)
Head's age:[35, 45)	**-0.58*** **	**(0.11)**				
Head's age:[45, 55)	-0.46***	(0.10)	-0.01	(0.05)	-0.04	(0.03)
Head's age:[55, 65)	-0.20*	(0.10)	0.01	(0.05)	-0.07*	(0.04)
Head's age≥65 (omitted category)						
Sent rem to urban sector	0.44***	(0.05)	0.11*	(0.06)	0.03	(0.04)
Household kin-fosters	0.12*	(0.07)	-0.09*	(0.05)	-0.04	(0.04)
# of children (<15 yrs)	0.07**	(0.03)	-0.03	(0.02)	-0.04***	(0.01)
# of elderly (>65 yrs)	0.27***	(0.07)	-0.05	(0.06)	-0.17***	(0.05)
Member attends school	0.21***	(0.06)	-0.14***	(0.05)	-0.27***	(0.03)
Low employment income	0.04	(0.10)	0.13*	(0.07)	-0.04	(0.05)
Medium employment income	-0.03	(0.13)	0.06	(0.09)	0.13**	(0.06)
High employment income	0.03	(0.14)	0.36***	(0.10)	0.34***	(0.07)
Zero employment income (omitted category)						
Household size	-0.10***	(0.02)	-0.08***	(0.02)	-0.05***	(0.01)
Male head	-0.53***	(0.07)	-0.08	(0.07)	0.15***	(0.05)
Head married	-0.21*	(0.12)	0.09	(0.09)	-0.18***	(0.06)
Head in informal union	-0.13	(0.13)	0.01	(0.09)	-0.31***	(0.06)
Head divorced/separated	-0.36***	(0.13)	-0.01	(0.10)	-0.21***	(0.07)
Head widowed	-0.27*	(0.15)	-0.01	(0.10)	-0.23***	(0.08)
Head never married (omitted category)						
Head-MSLC/BECE	0.10	(0.06)	0.09**	(0.04)	0.03	(0.03)
Head-voc/comm/O/A	0.02	(0.14)	0.17*	(0.10)	0.04	(0.06)
Head-TT/nursing/tech/prof	-0.12	(0.16)	0.17	(0.12)	0.18**	(0.07)
Head-degree	0.17	(0.45)	0.30	(0.32)	0.40*	(0.23)
Head-unspec. educ	-0.72	(0.48)	0.16	(0.39)	0.07	(0.16)
Head-no educ qualification (omitted category)						
Head-agric.	-0.46***	(0.14)	0.22**	(0.09)	0.21**	(0.10)
Head-industry	-0.78***	(0.16)	0.28**	(0.14)	0.37***	(0.12)

Table 55: Continued …

	(1) Probit		(2) Welf1		(3) Welf0	
Head-services	-0.52***	(0.15)	0.27***	(0.10)	0.32***	(0.10)
Head unemployed (omitted category)						
Farm/livestock	-0.06	(0.09)	0.08	(0.06)	-0.02	(0.05)
Food processing	-0.10	(0.06)	-0.07	(0.04)	0.02	(0.03)
Other business	-0.07	(0.05)	0.09**	(0.04)	0.14***	(0.03)
Pipe-borne water	-0.13*	(0.07)	0.02	(0.05)	0.11***	(0.04)
Electricity/generator	0.22***	(0.07)	0.17***	(0.05)	0.03	(0.04)
Forest ecological zone	0.03	(0.07)	-0.05	(0.05)	0.09**	(0.04)
Savannah ecological zone	-0.14	(0.11)	-0.16**	(0.08)	0.26***	(0.05)
Coastal ecological zone (omitted category)						
Western Region	-0.68***	(0.16)	0.76***	(0.14)	1.23***	(0.09)
Central Region	-0.25	(0.16)	0.52***	(0.11)	0.93***	(0.08)
Greater Accra Region	-0.20	(0.19)	0.97***	(0.13)	1.18***	(0.10)
Eastern Region	-0.41***	(0.14)	0.68***	(0.11)	0.82***	(0.07)
Volta Region	-0.24	(0.15)	0.67***	(0.11)	0.98***	(0.07)
Ashanti Region	-0.41***	(0.15)	0.77***	(0.12)	1.04***	(0.08)
Brong-Ahafo Region	-0.36***	(0.14)	0.83***	(0.10)	0.96***	(0.07)
Northern Region	-0.26*	(0.14)	0.33***	(0.11)	0.58***	(0.06)
Upper West Region	-1.15***	(0.22)	0.33	(0.24)	0.50***	(0.10)
Upper East Region (omitted category)						
Head-other			0.00	(0.00)	0.00	(0.00)
Selectivity			-0.17	(0.17)	0.70***	(0.15)
Constant	1.45***	(0.25)	13.58***	(0.16)	12.76***	(0.24)
r2			0.42		0.45	
r2_a			0.40		0.44	
F			18.48		41.79	
rmse			0.53		0.54	
N	3422.00		1146.00		2276.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2; rmse: Root of mean square error

Table 56: Impact of urban-to-rural remittances on recipients' welfare

	Number of households	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Actual rural recipients of urban remittances	1,147	60.57	95.03 (Mean % gain = 64.22)	4.97 (Mean % loss = 9.21)
Rural non-recipients (hypothetical scenario)	2,276	17.51	81.90 (Mean % gain = 23.61)	18.10 (Mean % loss = 10.06)

Our findings regarding the impact of urban-to-rural remittances on the welfare of recipients are summarised in Table 56. Remittances considerably improved the welfare of recipients, with the mean proportionate welfare gain being 60.6 percent. It should be noted though, that not every recipient household gained; the proportion of recipients that gained was 95.0 percent and the mean proportionate gain for these recipients was 64.2 percent. Recipients who did not gain incurred an average proportionate loss of 9.2 percent. We also find that rural non-recipients would have had a mean proportionate welfare increment of 17.5 percent if they had received remittances from the urban sector. These results lend credence to the importance of urban remittances to rural dwellers. To provide some indication of how the results might vary with different specifications of the model, the results corresponding to an alternative model specification[75] are shown in Table 60 in the Appendix.

7.4.7 Impact of rural-to-urban remittances on the welfare of recipients

The selectivity-adjusted OLS regressions used in our analysis of the counterfactual scenarios are presented in Table 57. Regression "Welf1" shows the parameter estimates used to calculate recipient welfare for urban non-recipients. The regression labelled "Welf0" represents the set of parameter estimates applied in the computation of non-recipient welfare for urban recipients of rural remittances. The identifying variable for

[75] For this alternative specification, the welfare regressions exclude regressors for number of children and number of elderly individuals.

the welfare regressions is the dummy for the household head belonging to the age range 35-45 years. A test of the validity of this exclusion restriction is provided by Table 68. As was done for the previous analysis, the regressors in both regressions include measures of – or proxies for – human capital, physical assets, household attributes, community characteristics, income-generating capacity, and location. Judging from the adjusted-R-squared (r2_a), F-statistic, and root of mean square error ("rmse"), the regressions exhibit satisfactory performance.

Table 58 summarises the results of the analysis. Unlike the case of urban-to-rural remittances, rural-to-urban remittances have a somewhat negligible impact on recipients' welfare. Urban recipients of rural remittances incurred a mean proportionate welfare gain of 1.1 percent, with 33.7 percent of recipients deriving a welfare gain. The proportionate welfare gain of the gainers was 50.3 percent on average, whilst the non-gainers had a mean proportionate welfare loss of 24.0 percent. According to our results, urban non-recipients of remittances would have had a 12.4 percent welfare decline if they had received rural remittances. On the whole, our findings suggest that rural-to-urban remittances have little impact on the welfare of recipients.

On the issue of how the receipt of remittances can lead to a fall in welfare, it is important to note that our analysis is not based on a *"before and after"* comparison, but rather, it is based on the evaluation of the "*with and without"* counterfactual scenarios. Thus, it is conceivable for a remittance recipient to be better off without the remittances. As mentioned earlier, this can occur, for instance, if the remittances are substitutes for what a current migrant would have contributed if he/she had not migrated, but remained a member of the current recipient household. It is also possible for remittance receipts to lead to welfare losses if they result in recipients becoming overly dependent on them.

Table 57: Recipient (Welf1) and non-recipient (Welf0) welfare regressions, together with first-stage Probit: rural-to-urban model

Dependent variable: Log of welfare

	(1) Probit		(2) Welf1		(3) Welf0	
Head's age:[15, 25)	-0.31	(0.32)	-0.04	(0.22)	-0.04	(0.06)
Head's age:[25, 35)	-0.58***	(0.22)	-0.07	(0.20)	0.06	(0.04)
Head's age:[35, 45)	**-0.52****	**(0.21)**				
Head's age:[45, 55)	-0.62***	(0.21)	0.03	(0.21)	0.05	(0.04)
Head's age:[55, 65)	-0.52**	(0.23)	-0.43**	(0.21)	0.09*	(0.05)
Head's age≥65 (omitted category)						
R-U in-migrant present	0.47***	(0.16)	-0.25	(0.26)	-0.06	(0.05)
Household size	0.05	(0.03)	-0.22***	(0.04)	-0.10***	(0.01)
Sent rem to rural sector	0.41***	(0.15)	0.08	(0.18)	0.10**	(0.04)
Member attends school	-0.11	(0.17)	-0.10	(0.16)	-0.07*	(0.04)
Low employment income	0.18	(0.23)	0.42**	(0.19)	-0.11**	(0.05)
Medium employment income	-0.25	(0.29)	0.18	(0.42)	-0.09*	(0.05)
High employment income	0.16	(0.23)	0.21	(0.22)	0.11**	(0.05)
Zero employment income (omitted category)						
Male head	-0.65***	(0.14)	0.15	(0.24)	-0.06	(0.05)
Head-MSLC/BECE	-0.07	(0.16)	0.02	(0.16)	0.08**	(0.04)
Head-voc/comm/O/A	-0.01	(0.24)	0.70***	(0.25)	0.21***	(0.05)
Head-TT/nursing/tech/prof	-0.12	(0.27)	-0.03	(0.31)	0.26***	(0.05)
Head-degree	0.17	(0.58)	0.89	(0.56)	0.50***	(0.13)
Head-unspec. educ			0.00	(0.00)	0.00	(0.00)
Head-no educ qualification (omitted category)						
Head-agric.	-0.34	(0.26)	-0.15	(0.25)	0.02	(0.07)
Head-industry	-0.70***	(0.26)	-0.34	(0.32)	0.15**	(0.07)
Head-services	-0.49**	(0.22)	-0.20	(0.26)	0.15**	(0.07)
Head-other			0.00	(0.00)	0.00	(0.00)
Head unemployed (omitted category)						
Pipe-borne water	-0.39**	(0.16)	0.51**	(0.21)	0.15***	(0.05)
Electricity/generator	-0.00	(0.16)	0.34**	(0.14)	0.32***	(0.04)
Farm/livestock	-0.02	(0.18)	0.24	(0.18)	-0.04	(0.04)
Food processing	0.15	(0.15)	0.08	(0.13)	-0.10***	(0.04)

Table 57: Continued …

Dependent variable: Log of welfare

	(1) Probit		(2) Welf1		(3) Welf0	
Other business	-0.07	(0.14)	0.31**	(0.14)	0.07**	(0.03)
Forest ecological zone	-0.06	(0.23)	0.04	(0.22)	0.12**	(0.06)
Savannah ecological zone	-0.80**	(0.40)	-0.82	(0.49)	0.21**	(0.09)
Coastal ecological zone (omitted category)						
Western Region	-0.89	(0.70)	-0.84	(0.76)	0.26	(0.17)
Central Region	-0.66	(0.71)	-1.18	(0.76)	-0.11	(0.17)
Greater Accra Region	-1.06	(0.70)	-0.78	(0.79)	0.36**	(0.17)
Eastern Region	-0.86	(0.67)	-0.46	(0.71)	0.08	(0.16)
Volta Region	-0.41	(0.67)	-0.74	(0.70)	-0.05	(0.16)
Ashanti Region	-0.76	(0.68)	-0.57	(0.74)	0.29*	(0.17)
Brong-Ahafo Region	-0.41	(0.67)	-0.97	(0.71)	0.21	(0.16)
Northern Region	-0.41	(0.61)	0.32	(0.61)	-0.09	(0.15)
Upper West Region			0.00	(0.00)	0.00	(0.00)
Upper East Region (omitted category)						
Selectivity			0.10	(0.42)	0.18	(0.25)
Constant	0.60	(0.73)	14.87***	(0.74)	13.99***	(0.22)
r2			0.80		0.51	
r2_a			0.66		0.49	
F			5.65		36.74	
rmse			0.40		0.48	
N	1376.00		86.00		1290.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
rmse: Root of mean square error

Table 58: Impact of rural-to-urban remittances on recipients' welfare

	Number of households	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Actual urban recipients of rural remittances	86	1.07	33.72 (Mean % gain = 50.32)	66.28 (Mean % loss = 23.98)
Urban non-recipients (hypothetical scenario)	1,315	-10.30	31.48 (Mean % gain = 46.37)	68.52 (Mean % loss = 36.34)

7.5 Conclusion

This chapter has highlighted the prevalence and importance of remittances in the livelihoods of Ghana's rural and urban households. Several factors influencing remittance flows between rural and urban sectors have been identified. These include employment income, the presence of an in-migrant, kin-fostering, the relationship between remitters and recipients, and gender. Our results provide support for the presence of both altruism and self-interest in remittance decisions. Furthermore, the results are consistent with the view that it is appropriate to treat the remittance decision as comprising two decisions, namely, the decision to remit, and the decision about the remittance size.

Regarding the evaluation of the impact of remittances on recipients' welfare, the overall results indicate a positive welfare impact, especially of urban-to-rural remittance; even though rural-to-urban remittances had little impact on the welfare of recipients, rural recipients of urban remittances were found to derive considerable welfare gains. Thus, our findings support the view that inter-sectoral remittances generally play an important role in the livelihoods of Ghana's rural and urban households. For rural residents in particular, these remittances represent a major avenue for improvements in living standards.

The analysis and findings of this chapter represent a valuable addition to the remittance literature in general, and to the Ghana remittance literature in particular. With the exception of Adams (2006), this appears to be the only Ghana remittance study that employs counterfactual analyses to evaluate welfare impacts. Moreover, our methodological approach offers a more comprehensive analysis of remittances' welfare impact than is provided by Adams (2006). This is because we are able to determine not only the *mean* proportionate welfare impact of remittances, but also the proportionate welfare impact of remittances for *each recipient* household; this facilitates the evaluation of each recipient's welfare-gain status.

Although we have examined key welfare impacts of migration and of remittances in the preceding and present chapters, the poverty impacts of these livelihood strategies have not been addressed. Given the widely documented prevalence of poverty in Ghana, it is pertinent to extend our analyses to investigate the poverty impacts of migration and remittances within the context of rural-urban linkages. These issues are addressed in the next chapter.

Appendix to Chapter Seven

Table 59: Incidence of fostering in Ghana; 1998/99

Location of household	Proportion of under-18s that were kin-fostered	Proportion of under-18s that were fostered	Proportion of households that were kin-fostering	Proportion of households that were fostering
Urban	16.84%	17.63%	17.01%	17.74
Rural	13.72%	14.1%	18.22%	18.61
All	14.67%	15.18%	17.77%	18.29%

Source: Author's computation, using data from the 1998/99 Ghana Living Standards Survey.

Table 60: Impact of urban-to-rural remittances on recipients' welfare, using an alternative model specification[76]

	Number of households	Mean percentage welfare gain	Percentage with welfare gain	Percentage without welfare gain
Actual Recipients	1,147	32.22	87.88 (Mean % gain = 38.04)	12.12 (Mean % loss = 9.99)
Non-recipients (hypothetical scenario)	2,276	13.36	77.68 (Mean % gain = 20.32)	22.32 (Mean % loss = 10.86)

[76] The welfare regressions in this alternative specification do not have regressors for the number of children and the number of elderly individuals.

Table 61: Test of equality of coefficients in welfare regressions: rural recipients of urban remittances versus rural non-recipients

test [welf1_mean = welf0_mean];

```
 ( 1)  [welf1_mean]agegphd1 - [welf0_mean]agegphd1 = 0
 ( 2)  [welf1_mean]agegphd2 - [welf0_mean]agegphd2 = 0
 (3)  [welf1_mean]agegphd4 - [welf0_mean]agegphd4 = 0
 (4)  [welf1_mean]agegphd5 - [welf0_mean]agegphd5 = 0
 (5)  [welf1_mean]urts1 - [welf0_mean]urts1 = 0
 (6)  [welf1_mean]kf1 - [welf0_mean]kf1 = 0
 (7)  [welf1_mean]n15 - [welf0_mean]n15 = 0
 (8)  [welf1_mean]n65 - [welf0_mean]n65 = 0
 (9)  [welf1_mean]ps1 - [welf0_mean]ps1 = 0
 (10)  [welf1_mean]empig2 - [welf0_mean]empig2 = 0
 (11)  [welf1_mean]empig3 - [welf0_mean]empig3 = 0
 (12)  [welf1_mean]empig4 - [welf0_mean]empig4 = 0
 (13)  [welf1_mean]hhsize - [welf0_mean]hhsize = 0
 (14)  [welf1_mean]sexhd1 - [welf0_mean]sexhd1 = 0
 (15)  [welf1_mean]marhd1 - [welf0_mean]marhd1 = 0
 (16)  [welf1_mean]marhd2 - [welf0_mean]marhd2 = 0
 (17)  [welf1_mean]marhd3 - [welf0_mean]marhd3 = 0
 (18)  [welf1_mean]marhd4 - [welf0_mean]marhd4 = 0
 (19)  [welf1_mean]hiedqhd2 - [welf0_mean]hiedqhd2 = 0
 (20)  [welf1_mean]hiedqhd3 - [welf0_mean]hiedqhd3 = 0
 (21)  [welf1_mean]hiedqhd4 - [welf0_mean]hiedqhd4 = 0
 (22)  [welf1_mean]hiedqhd5 - [welf0_mean]hiedqhd5 = 0
 (23)  [welf1_mean]hiedqhd6 - [welf0_mean]hiedqhd6 = 0
 (24)  [welf1_mean]empcathd2 - [welf0_mean]empcathd2 = 0
 (25)  [welf1_mean]empcathd3 - [welf0_mean]empcathd3 = 0
 (26)  [welf1_mean]empcathd4 - [welf0_mean]empcathd4 = 0
 (27)  [welf1_mean]empcathd5 - [welf0_mean]empcathd5 = 0
 (28)  [welf1_mean]farmliv1 - [welf0_mean]farmliv1 = 0
 (29)  [welf1_mean]foodpr1 - [welf0_mean]foodpr1 = 0
```

```
 (30)  [welf1_mean]othbus1 - [welf0_mean]othbus1 = 0
 (31)  [welf1_mean]pbw1 - [welf0_mean]pbw1 = 0
 (32)  [welf1_mean]eg1 - [welf0_mean]eg1 = 0
 (33)  [welf1_mean]ez2 - [welf0_mean]ez2 = 0
 (34)  [welf1_mean]ez3 - [welf0_mean]ez3 = 0
 (35)  [welf1_mean]reg1 - [welf0_mean]reg1 = 0
 (36)  [welf1_mean]reg2 - [welf0_mean]reg2 = 0
 (37)  [welf1_mean]reg3 - [welf0_mean]reg3 = 0
 (38)  [welf1_mean]reg4 - [welf0_mean]reg4 = 0
 (39)  [welf1_mean]reg5 - [welf0_mean]reg5 = 0
 (40)  [welf1_mean]reg6 - [welf0_mean]reg6 = 0
 (41)  [welf1_mean]reg7 - [welf0_mean]reg7 = 0
 (42)  [welf1_mean]reg8 - [welf0_mean]reg8 = 0
 (43)  [welf1_mean]reg9 - [welf0_mean]reg9 = 0
```

chi2(43) = 83.35

Prob > chi2 (i.e., the p-value for the test) = 0.0002

Table 62: Test of equality of coefficients in welfare regressions: urban recipients of rural remittances versus urban non-recipients

test [welf1_mean = welf0_mean];

(1) [welf1_mean]agegphd1 - [welf0_mean]agegphd1 = 0
(2) [welf1_mean]agegphd2 - [welf0_mean]agegphd2 = 0
(3) [welf1_mean]agegphd4 - [welf0_mean]agegphd4 = 0
(4) [welf1_mean]agegphd5 - [welf0_mean]agegphd5 = 0
(5) [welf1_mean]inmig3yes1 - [welf0_mean]inmig3yes1 = 0
(6) [welf1_mean]hhsize - [welf0_mean]hhsize = 0
(7) [welf1_mean]rrts1 - [welf0_mean]rrts1 = 0
(8) [welf1_mean]ps1 - [welf0_mean]ps1 = 0
(9) [welf1_mean]empig2 - [welf0_mean]empig2 = 0
(10) [welf1_mean]empig3 - [welf0_mean]empig3 = 0
(11) [welf1_mean]empig4 - [welf0_mean]empig4 = 0
(12) [welf1_mean]sexhd1 - [welf0_mean]sexhd1 = 0
(13) [welf1_mean]hiedqhd2 - [welf0_mean]hiedqhd2 = 0
(14) [welf1_mean]hiedqhd3 - [welf0_mean]hiedqhd3 = 0
(15) [welf1_mean]hiedqhd4 - [welf0_mean]hiedqhd4 = 0
(16) [welf1_mean]hiedqhd5 - [welf0_mean]hiedqhd5 = 0
(17) [welf1_mean]hiedqhd6 - [welf0_mean]hiedqhd6 = 0
(18) [welf1_mean]empcathd2 - [welf0_mean]empcathd2 = 0
(19) [welf1_mean]empcathd3 - [welf0_mean]empcathd3 = 0
(20) [welf1_mean]empcathd4 - [welf0_mean]empcathd4 = 0
(21) [welf1_mean]empcathd5 - [welf0_mean]empcathd5 = 0
(22) [welf1_mean]pbw1 - [welf0_mean]pbw1 = 0
(23) [welf1_mean]eg1 - [welf0_mean]eg1 = 0
(24) [welf1_mean]farmliv1 - [welf0_mean]farmliv1 = 0
(25) [welf1_mean]foodpr1 - [welf0_mean]foodpr1 = 0
(26) [welf1_mean]othbus1 - [welf0_mean]othbus1 = 0
(27) [welf1_mean]ez2 - [welf0_mean]ez2 = 0
(28) [welf1_mean]ez3 - [welf0_mean]ez3 = 0
(29) [welf1_mean]reg1 - [welf0_mean]reg1 = 0

(30) [welf1_mean]reg2 - [welf0_mean]reg2 = 0

(31) [welf1_mean]reg3 - [welf0_mean]reg3 = 0

(32) [welf1_mean]reg4 - [welf0_mean]reg4 = 0

(33) [welf1_mean]reg5 - [welf0_mean]reg5 = 0

(34) [welf1_mean]reg6 - [welf0_mean]reg6 = 0

(35) [welf1_mean]reg7 - [welf0_mean]reg7 = 0

(36) [welf1_mean]reg8 - [welf0_mean]reg8 = 0

(37) [welf1_mean]reg9 - [welf0_mean]reg9 = 0

chi2(37) = 280.08

Prob > chi2 (i.e., the p-value for the test) = 0.0000

Table 63: Test of validity of exclusion restriction; urban-to-rural remittance outflow

Dependent variables:
Probit - dummy (1 if urban-to-rural remitter, 0 if urban non-remitter);
Adjusted-OLS – Log of urban-to-rural remittances sent;
Tobit – Urban-to-rural remittances (‘000 cedis) sent

	(1) Probit		(2) Adjusted-OLS	
R-U in-migrant present	**0.69*** **	**(0.11)**	**1.53**	**(1.10)**
Male head	0.37***	(0.10)	1.23*	(0.67)
Low employment income	-0.10	(0.15)	-0.50*	(0.30)
Medium employment income	0.29**	(0.13)	0.77	(0.50)
High employment income	0.08	(0.13)	0.38*	(0.22)
Zero employment income (omitted category)				
Household size	-0.02	(0.02)	-0.11**	(0.05)
Received rural remittance	0.36**	(0.18)	0.04	(0.65)
Household kin-fosters	0.15	(0.12)	0.84**	(0.32)
Head's age:[15, 25)	0.25	(0.27)	0.47	(0.65)
Head's age:[25, 35)	0.51***	(0.17)	1.28	(0.94)
Head's age:[35, 45)	0.64***	(0.16)	1.60	(1.13)
Head's age:[45, 55)	0.52***	(0.16)	1.62*	(0.97)
Head's age:[55, 65)	0.18	(0.17)	0.35	(0.46)
Head’s age≥65 (omitted category)				
Head married	0.52***	(0.17)	1.18	(0.94)
Head in informal union	-0.05	(0.19)	-0.56	(0.35)
Head divorced/separated	0.40**	(0.19)	0.87	(0.75)
Head widowed	0.39*	(0.23)	0.50	(0.76)
Head never married (omitted category)				
Head-agric.	0.28*	(0.16)	0.44	(0.60)
Head-industry	0.45***	(0.16)	1.14	(0.83)
Head-services	0.32**	(0.15)	0.95	(0.63)
Head unemployed (omitted category)				
Forest ecological zone	0.13	(0.15)	0.10	(0.33)
Savannah ecological zone	-0.29	(0.24)	-0.80	(0.66)
Coastal ecological zone (omitted category)				

Table 63: Continued …

	(1) Probit		(2) Adjusted-OLS	
Western Region	0.04	(0.53)	0.45	(0.88)
Central Region	-0.45	(0.54)	-1.18	(1.21)
Greater Accra Region	-0.21	(0.53)	0.74	(0.96)
Eastern Region	-0.25	(0.52)	0.29	(0.95)
Volta Region	-0.15	(0.53)	0.30	(0.91)
Ashanti Region	-0.18	(0.52)	0.61	(0.91)
Brong-Ahafo Region	-0.29	(0.52)	0.30	(0.99)
Northern Region	-0.15	(0.50)	0.70	(0.86)
Upper West Region	-0.43	(0.74)	-1.29	(1.50)
Upper East Region (omitted category)				
No. of rural recipients			0.47***	(0.09)
Selectivity			3.19	(2.27)
Constant	-2.14***	(0.58)	2.61	(5.51)
N	1559.00		297.00	
r2			0.38	
r2_a			0.31	
F			4.94	
r2_p	0.12			
chi2	189.36			

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
r2_p: Pseudo r2

Table 64: Test of validity of exclusion restrictions; rural-to-urban remittance outflow

Dependent variables:
Probit - dummy (1 if rural-to-urban remitter, 0 if rural non-remitter);
Adjusted-OLS – Log of rural-to-urban remittances sent;
Tobit – Rural-to-urban remittances (‘000 cedis) sent

	(1) Probit		(2) Adj. OLS1		(3) Adj. OLS2	
U-R in-migrant present	**0.12***	**(0.07)**	**0.10**	**(0.10)**		
Male head	**0.28*****	**(0.06)**			**-0.17**	**(0.19)**
Low employment income	0.27***	(0.10)	-0.17	(0.16)	-0.31	(0.20)
Medium employment income	0.17	(0.13)	0.02	(0.18)	-0.07	(0.20)
High employment income	0.63***	(0.15)	0.14	(0.26)	-0.17	(0.37)
Zero employment income (omitted category)						
Household size	0.01	(0.01)	0.02	(0.02)	0.02	(0.02)
Received urban remittance	0.40***	(0.06)	-0.64***	(0.14)	-0.86***	(0.23)
Head's age:[15, 25)	-0.17	(0.15)	0.11	(0.26)	0.20	(0.28)
Head's age:[25, 35)	0.15	(0.09)	0.15	(0.15)	0.06	(0.17)
Head's age:[35, 45)	0.28***	(0.09)	0.02	(0.15)	-0.14	(0.20)
Head's age:[45, 55)	0.28***	(0.09)	-0.00	(0.15)	-0.17	(0.20)
Head's age:[55, 65)	0.13	(0.09)	-0.05	(0.14)	-0.13	(0.16)
Head’s age≥65 (omitted category)						
Head-MSLC/BECE	0.13**	(0.06)	0.18*	(0.10)	0.11	(0.11)
Head-voc/comm/O/A	0.25*	(0.14)	-0.00	(0.21)	-0.13	(0.23)
Head-TT/nursing/tech/prof	0.40**	(0.16)	0.02	(0.23)	-0.18	(0.28)
Head-degree	0.55	(0.47)	0.15	(0.53)	-0.13	(0.57)
Head-unspec. educ	-0.02	(0.42)	0.11	(0.56)	0.12	(0.56)
Head-no educ qualification (omitted category)						
Head-agric.	0.59***	(0.17)	-0.90**	(0.37)	-1.27**	(0.50)
Head-industry	0.46**	(0.19)	-0.84**	(0.37)	-1.13**	(0.46)
Head-services	0.44**	(0.18)	-0.80**	(0.34)	-1.08**	(0.44)
Head-other			0.00	(0.00)	0.00	(0.00)
Head unemployed (omitted category)						
Farm/livestock	0.30***	(0.11)	-0.28	(0.19)	-0.46**	(0.23)
Food processing	0.04	(0.07)	0.08	(0.10)	0.05	(0.10)

Table 64: Continued …

	(1) Probit		(2) Adj. OLS1		(3) Adj. OLS2	
Other business	0.23***	(0.06)	-0.18*	(0.10)	-0.30**	(0.15)
Pipe-borne water	-0.28***	(0.08)	0.08	(0.15)	0.23	(0.19)
Electricity/generator	0.26***	(0.08)	-0.01	(0.13)	-0.16	(0.18)
Forest ecological zone	0.48***	(0.08)	-0.19	(0.18)	-0.45	(0.29)
Savannah ecological zone	0.08	(0.12)	-0.01	(0.19)	-0.05	(0.19)
Coastal ecological zone (omitted category)						
Western Region	1.07***	(0.19)	0.29	(0.51)	-0.41	(0.79)
Central Region	1.28***	(0.19)	0.14	(0.55)	-0.68	(0.90)
Greater Accra Region	1.42***	(0.22)	0.57	(0.62)	-0.34	(1.00)
Eastern Region	0.86***	(0.17)	0.18	(0.45)	-0.42	(0.69)
Volta Region	1.07***	(0.18)	0.20	(0.51)	-0.51	(0.80)
Ashanti Region	0.86***	(0.18)	0.82*	(0.46)	0.23	(0.70)
Brong-Ahafo Region	0.71***	(0.17)	0.78*	(0.43)	0.28	(0.62)
Northern Region	0.44**	(0.17)	0.66	(0.41)	0.33	(0.50)
Upper West Region			0.00	(0.00)	0.00	(0.00)
Upper East Region (omitted category)						
Rec is head's parent			0.64***	(0.21)	0.65***	(0.21)
Rec is head's spouse			1.54***	(0.28)	1.54***	(0.28)
Rec is head's child			0.89***	(0.20)	0.89***	(0.20)
Rec is head's sibling			0.26	(0.21)	0.27	(0.21)
Rec is head's other rel			0.20	(0.21)	0.20	(0.21)
Rec not related to head (omitted category)						
No. of urban recipients			0.48***	(0.04)	0.48***	(0.04)
Selectivity			-0.83*	(0.45)	-1.67**	(0.84)
Constant	-3.25***	(0.26)	11.86***	(1.45)	14.52***	(2.71)
r2			0.35		0.35	
r2_a			0.32		0.32	
F			12.05		12.04	
chi2	542.95					
N	3044.00		977.00		977.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Table 65: Test of validity of exclusion restriction; urban-to-rural remittance receipt

Dependent variables:
Probit - dummy (1 if recipient of urban-to-rural remittance, 0 if rural non-recipient);
Adjusted-OLS – Log of urban-to-rural remittances received;
Tobit – Urban-to-rural remittances ('000 cedis) received

	(1) Probit		(2) Adjusted-OLS	
Male head	**-0.57*** **	**(0.07)**	**0.57**	**(0.42)**
Zero employment income	0.03	(0.14)	-0.10	(0.22)
Low employment income	0.05	(0.16)	-0.03	(0.25)
Medium employment income	-0.05	(0.17)	-0.12	(0.27)
High employment income (omitted category)				
Sent rem to urban sector	0.43***	(0.05)	-0.74**	(0.32)
Household kin-fosters	0.12*	(0.07)	-0.24**	(0.12)
# of children/elderly	-0.02	(0.02)	0.06**	(0.03)
Member attends school	0.13**	(0.06)	0.06	(0.13)
Head's age:[15, 25)	-0.54***	(0.15)	1.01**	(0.45)
Head's age:[25, 35)	-0.68***	(0.09)	1.04**	(0.51)
Head's age:[35, 45)	-0.77***	(0.09)	0.93	(0.57)
Head's age:[45, 55)	-0.70***	(0.08)	0.93*	(0.51)
Head's age:[55, 65)	-0.45***	(0.09)	0.44	(0.32)
Head's age≥65 (omitted category)				
Head married	-0.26**	(0.12)	0.08	(0.28)
Head in informal union	-0.16	(0.13)	-0.28	(0.23)
Head divorced/separated	-0.34**	(0.13)	0.31	(0.33)
Head widowed	-0.27*	(0.15)	0.10	(0.31)
Head never married (omitted category)				
Head-MSLC/BECE	0.11*	(0.06)	-0.02	(0.12)
Head-voc/comm/O/A	0.05	(0.14)	0.48**	(0.21)
Head-TT/nursing/tech/prof	-0.10	(0.16)	1.13***	(0.26)
Head-degree	0.24	(0.45)	-1.39	(0.86)
Head-unspec. educ	-0.70	(0.47)	0.99	(0.94)
Head-no educ qualification (omitted category)				

Table 65: Continued …

	(1) Probit		(2) Adjusted-OLS	
Head-agric.	-0.47***	(0.14)	0.17	(0.32)
Head-industry	-0.78***	(0.16)	0.49	(0.56)
Head-services	-0.52***	(0.15)	0.25	(0.35)
Head-other			0.00	(0.00)
Head unemployed (omitted category)				
Farm/livestock	-0.08	(0.09)	0.02	(0.15)
Food processing	-0.14**	(0.06)	0.17	(0.13)
Other business	-0.09*	(0.05)	0.02	(0.10)
Pipe-borne water	-0.13*	(0.07)	0.27**	(0.14)
Electricity/generator	0.21***	(0.07)	-0.05	(0.18)
Forest ecological zone	0.00	(0.07)	-0.18*	(0.11)
Savannah ecological zone	-0.19*	(0.11)	-0.31	(0.22)
Coastal ecological zone (omitted category)				
Western Region	-0.72***	(0.16)	0.39	(0.59)
Central Region	-0.29*	(0.16)	-0.22	(0.32)
Greater Accra Region	-0.21	(0.19)	0.51	(0.32)
Eastern Region	-0.45***	(0.14)	0.28	(0.39)
Volta Region	-0.27*	(0.15)	-0.25	(0.31)
Ashanti Region	-0.43***	(0.15)	0.55	(0.39)
Brong-Ahafo Region	-0.36***	(0.14)	0.58*	(0.33)
Northern Region	-0.32**	(0.14)	0.57*	(0.33)
Upper West Region	-1.15***	(0.22)	1.01	(0.99)
Upper East Region (omitted category)				
Rem is head's parent			0.58***	(0.20)
Rem is head's spouse			1.52***	(0.19)
Rem is head's child			0.60***	(0.15)
Rem is head's sibling			0.30**	(0.14)
Rem is head's other rel			0.07	(0.15)
Rem not related to head (omitted category)				

Table 65: Continued …

	(1) Probit		(2) Adjusted-OLS	
Urban remitter is a male			0.23***	(0.07)
No. of urban remitters			0.54***	(0.04)
Selectivity			-2.04*	(1.07)
Constant	1.63***	(0.28)	10.85***	(0.49)
r2			0.37	
r2_a			0.34	
F			12.83	
chi2	500.91			
N	3422.00		1139.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Table 66: Test of validity of exclusion restriction; rural-to-urban remittance inflow

Dependent variables:
Probit - dummy (1 if recipient of rural-to-urban remittance, 0 if urban non-recipient);
Adjusted-OLS – Log of rural-to-urban remittances received;
Tobit – Rural-to-urban remittances (‘000 cedis) received

	(1) Probit		(2) Adj. OLS1	
Male head	**-0.62*** **	**(0.14)**	**0.97**	**(3.44)**
R-U in-migrant present	0.49***	(0.16)	-1.85	(2.80)
Zero employment income	-0.16	(0.20)	-0.59	(0.99)
Low employment income	0.06	(0.26)	-0.91	(0.80)
Medium employment income	-0.38	(0.30)	-0.80	(2.55)
High employment income (omitted category)				
Sent rem to rural sector	0.39**	(0.15)	-0.69	(2.21)
Household kin-fosters	0.27*	(0.15)	-1.21	(1.60)
Head's age:[15, 25)	-0.33	(0.30)	0.79	(1.90)
Head's age:[25, 35)	-0.59***	(0.21)	1.99	(3.26)
Head's age:[35, 45)	-0.49**	(0.20)	0.85	(2.71)
Head's age:[45, 55)	-0.59***	(0.21)	1.71	(3.30)
Head's age:[55, 65)	-0.54**	(0.23)	0.96	(2.93)
Head’s age≥65 (omitted category)				
Head-agric.	-0.31	(0.23)	0.60	(1.80)
Head-industry	-0.68***	(0.24)	0.70	(3.90)
Head-services	-0.52**	(0.21)	1.43	(2.93)
Head-other			0.00	(0.00)
Head unemployed (omitted category)				
Pipe-borne water	-0.38**	(0.16)	1.22	(2.07)
Electricity/generator	-0.01	(0.16)	0.66	(0.41)
Forest ecological zone	-0.10	(0.23)	1.31	(0.84)
Savannah ecological zone	-0.86**	(0.40)	1.14	(5.19)
Coastal ecological zone (omitted category)				
Western Region	-0.99	(0.69)	-3.51	(6.15)
Central Region	-0.78	(0.70)	-1.84	(5.03)

Table 66: Continued …

	(1) Probit		(2) Adj. OLS1	
Greater Accra Region	-1.21*	(0.69)	-0.07	(7.43)
Eastern Region	-0.87	(0.67)	-0.44	(5.39)
Volta Region	-0.45	(0.66)	-3.60	(3.49)
Ashanti Region	-0.80	(0.67)	-1.71	(5.18)
Brong-Ahafo Region	-0.47	(0.67)	-3.54	(3.61)
Northern Region	-0.33	(0.61)	-0.60	(2.49)
Upper West Region			0.00	(0.00)
Upper East Region (omitted category)				
No. of rural remitters			0.62**	(0.28)
Selectivity			-3.50	(6.90)
Constant	0.90	(0.75)	15.87***	(1.93)
r2			0.54	
r2_a			0.31	
F			2.29	
chi2	116.52			
N	1384.00		86.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2

Table 67: Test of validity of exclusion restriction; urban-to-rural remittance-welfare model

Dependent variable: Log of welfare

	(1) Probit		(2) Welf1		(3) Welf0	
Head's age:[15, 25)	-0.34**	(0.16)	-0.09	(0.15)	-0.00	(0.10)
Head's age:[25, 35)	-0.50***	(0.11)	-0.15	(0.17)	0.05	(0.09)
Head's age:[35, 45)	**-0.58*** **	**(0.11)**	**-0.17**	**(0.19)**	**0.00**	**(0.10)**
Head's age:[45, 55)	-0.46***	(0.10)	-0.14	(0.16)	-0.04	(0.09)
Head's age:[55, 65)	-0.20*	(0.10)	-0.05	(0.08)	-0.07	(0.06)
Head's age≥65 (omitted category)						
Sent rem to urban sector	0.44***	(0.05)	0.22	(0.14)	0.03	(0.07)
Household kin-fosters	0.12*	(0.07)	-0.07	(0.05)	-0.04	(0.04)
# of children (<15 yrs)	0.07**	(0.03)	-0.01	(0.03)	-0.04**	(0.02)
# of elderly (>65 yrs)	0.27***	(0.07)	0.00	(0.09)	-0.17***	(0.05)
Member attends school	0.21***	(0.06)	-0.08	(0.08)	-0.27***	(0.04)
Low employment income	0.04	(0.10)	0.14*	(0.07)	-0.04	(0.05)
Medium employment income	-0.03	(0.13)	0.05	(0.09)	0.13**	(0.06)
High employment income	0.03	(0.14)	0.37***	(0.10)	0.34***	(0.07)
Zero employment income (omitted category)						
Household size	-0.10***	(0.02)	-0.10***	(0.03)	-0.05***	(0.02)
Male head	-0.53***	(0.07)	-0.21	(0.17)	0.15*	(0.08)
Head married	-0.21*	(0.12)	0.03	(0.11)	-0.18***	(0.07)
Head in informal union	-0.13	(0.13)	-0.03	(0.10)	-0.31***	(0.07)
Head divorced/separated	-0.36***	(0.13)	-0.12	(0.15)	-0.21**	(0.08)
Head widowed	-0.27*	(0.15)	-0.10	(0.14)	-0.23***	(0.08)
Head never married (omitted category)						
Head-MSLC/BECE	0.10	(0.06)	0.12**	(0.05)	0.02	(0.03)
Head-voc/comm/O/A	0.02	(0.14)	0.18*	(0.10)	0.04	(0.06)
Head-TT/nursing/tech/prof	-0.12	(0.16)	0.14	(0.12)	0.18**	(0.07)
Head-degree	0.17	(0.45)	0.35	(0.32)	0.40*	(0.23)
Head-unspec. educ	-0.72	(0.48)	-0.01	(0.43)	0.07	(0.17)
Head-no educ qualification (omitted category)						
Head-agric.	-0.46***	(0.14)	0.13	(0.14)	0.21*	(0.11)
Head-industry	-0.78***	(0.16)	0.10	(0.24)	0.38***	(0.14)

Table 67: Continued …

	(1) Probit		(2) Welf1		(3) Welf0	
Head-services	-0.52***	(0.15)	0.16	(0.15)	0.33***	(0.12)
Head-other			0.00	(0.00)	0.00	(0.00)
Head unemployed (omitted category)						
Farm/livestock	-0.06	(0.09)	0.06	(0.07)	-0.02	(0.05)
Food processing	-0.10	(0.06)	-0.09*	(0.05)	0.02	(0.03)
Other business	-0.07	(0.05)	0.07*	(0.04)	0.14***	(0.03)
Pipe-borne water	-0.13*	(0.07)	-0.01	(0.06)	0.11***	(0.04)
Electricity/generator	0.22***	(0.07)	0.23***	(0.08)	0.03	(0.05)
Forest ecological zone	0.03	(0.07)	-0.04	(0.05)	0.09**	(0.04)
Savannah ecological zone	-0.14	(0.11)	-0.20**	(0.09)	0.26***	(0.06)
Coastal ecological zone (omitted category)						
Western Region	-0.68***	(0.16)	0.59**	(0.24)	1.23***	(0.11)
Central Region	-0.25	(0.16)	0.46***	(0.14)	0.93***	(0.08)
Greater Accra Region	-0.20	(0.19)	0.92***	(0.14)	1.18***	(0.10)
Eastern Region	-0.41***	(0.14)	0.57***	(0.16)	0.82***	(0.08)
Volta Region	-0.24	(0.15)	0.61***	(0.13)	0.98***	(0.08)
Ashanti Region	-0.41***	(0.15)	0.66***	(0.17)	1.04***	(0.09)
Brong-Ahafo Region	-0.36***	(0.14)	0.74***	(0.15)	0.96***	(0.08)
Northern Region	-0.26*	(0.14)	0.26**	(0.13)	0.58***	(0.07)
Upper West Region	-1.15***	(0.22)	0.02	(0.43)	0.51***	(0.13)
Upper East Region (omitted category)						
Selectivity			0.21	(0.46)	0.71***	(0.27)
Constant	1.45***	(0.25)	13.64***	(0.17)	12.75***	(0.43)
r2			0.42		0.45	
r2_a			0.40		0.44	
F			18.08		40.82	
rmse			0.53		0.54	
N	3422.00		1146.00		2276.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2; rmse: Root of mean square error

Table 68: Test of validity of exclusion restriction; rural-to-urban remittance-welfare model

Dependent variable: Log of welfare

	(1) Probit		(2) Welf1		(3) Welf0	
Head's age:[15, 25)	-0.31	(0.32)	0.01	(0.66)	-0.11	(0.09)
Head's age:[25, 35)	-0.58***	(0.22)	0.03	(1.20)	-0.02	(0.07)
Head's age:[35, 45)	**-0.52****	**(0.21)**	**0.09**	**(1.08)**	**-0.09**	**(0.07)**
Head's age:[45, 55)	-0.62***	(0.21)	0.13	(1.31)	-0.03	(0.08)
Head's age:[55, 65)	-0.52**	(0.23)	-0.34	(1.08)	0.01	(0.08)
Head's age≥65 (omitted category)						
R-U in-migrant present	0.47***	(0.16)	-0.33	(1.02)	-0.04	(0.05)
Household size	0.05	(0.03)	-0.23**	(0.11)	-0.10***	(0.01)
Sent rem to rural sector	0.41***	(0.15)	0.01	(0.88)	0.11**	(0.04)
Member attends school	-0.11	(0.17)	-0.08	(0.25)	-0.07*	(0.04)
Low employment income	0.18	(0.23)	0.39	(0.43)	-0.11**	(0.05)
Medium employment income	-0.25	(0.29)	0.23	(0.75)	-0.10**	(0.05)
High employment income	0.16	(0.23)	0.19	(0.36)	0.11**	(0.05)
Zero employment income (omitted category)						
Male head	-0.65***	(0.14)	0.26	(1.36)	-0.09*	(0.05)
Head-MSLC/BECE	-0.07	(0.16)	0.03	(0.23)	0.09**	(0.04)
Head-voc/comm/O/A	-0.01	(0.24)	0.70**	(0.26)	0.22***	(0.05)
Head-TT/nursing/tech/prof	-0.12	(0.27)	-0.00	(0.42)	0.27***	(0.05)
Head-degree	0.17	(0.58)	0.84	(0.75)	0.51***	(0.13)
Head-unspec. educ			0.00	(0.00)	0.00	(0.00)
Head-no educ qualification (omitted category)						
Head-agric.	-0.34	(0.26)	-0.09	(0.77)	0.02	(0.07)
Head-industry	-0.70***	(0.26)	-0.22	(1.50)	0.14*	(0.07)
Head-services	-0.49**	(0.22)	-0.12	(1.05)	0.14**	(0.07)
Head-other			0.00	(0.00)	0.00	(0.00)
Head unemployed (omitted category)						
Pipe-borne water	-0.39**	(0.16)	0.57	(0.81)	0.12**	(0.05)

Table 68: Continued …

	(1) Probit		(2) Welf1		(3) Welf0	
Electricity/generator	-0.00	(0.16)	0.34**	(0.15)	0.32***	(0.04)
Farm/livestock	-0.02	(0.18)	0.24	(0.18)	-0.04	(0.04)
Food processing	0.15	(0.15)	0.05	(0.34)	-0.09**	(0.04)
Other business	-0.07	(0.14)	0.33*	(0.19)	0.07**	(0.03)
Forest ecological zone	-0.06	(0.23)	0.05	(0.26)	0.12**	(0.06)
Savannah ecological zone	-0.80**	(0.40)	-0.67	(1.85)	0.18*	(0.09)
Coastal ecological zone (omitted category)						
Western Region	-0.89	(0.70)	-0.67	(2.20)	0.22	(0.17)
Central Region	-0.66	(0.71)	-1.05	(1.75)	-0.14	(0.17)
Greater Accra Region	-1.06	(0.70)	-0.57	(2.58)	0.32*	(0.17)
Eastern Region	-0.86	(0.67)	-0.29	(2.06)	0.04	(0.16)
Volta Region	-0.41	(0.67)	-0.65	(1.30)	-0.07	(0.16)
Ashanti Region	-0.76	(0.68)	-0.42	(1.93)	0.26	(0.17)
Brong-Ahafo Region	-0.41	(0.67)	-0.88	(1.31)	0.19	(0.16)
Northern Region	-0.41	(0.61)	0.39	(1.11)	-0.11	(0.15)
Upper West Region			0.00	(0.00)	0.00	(0.00)
Upper East Region (omitted category)						
Selectivity			-0.11	(2.61)	-0.04	(0.30)
Constant	0.60	(0.73)	14.91***	(0.88)	14.16***	(0.26)
r2			0.80		0.51	
r2_a			0.65		0.49	
F			5.38		35.78	
rmse			0.40		0.48	
N	1376.00		86.00		1290.00	

Standard errors in parentheses
* p<.1, ** p<.05, *** p<.01
r2_a: Adjusted r2
rmse: Root of mean square error

Chapter Eight:
Impacts of Migration and Remittances on Poverty

8.1 Introduction

In chapter six, we examined the impact of migration between Ghana's rural and urban sectors on the welfare of migrants. The seventh chapter, on the other hand, focused on the impacts of remittances (urban-to-rural and rural-to-urban) on the welfare of recipients. Thus, on the basis of GLSS4 data, and in the context of rural-urban linkages, these two chapters have provided useful insight into the extent to which Ghana's migration and remittance flows influenced living standards. Although knowledge about the welfare impacts of migration and remittances is very useful, it is often more desirable to know how the lower end of the welfare distribution is affected. This is because poverty reduction is arguably more desirable than an improvement in living standards not shared by the poor. Since our analysis so far has not focused on the poverty implications of migration and remittances, it is pertinent to address this important issue. In the context of rural-urban linkages, is there evidence in support of migration and remittances helping households to escape poverty?

This chapter focuses on the impacts of migration and remittances on poverty. In the context of rural-urban linkages, the following research questions are addressed:

(i) What is the impact of migration on the poverty status of in-migrants?
(ii) What is the impact of remittances on the poverty status of recipients?
(iii) What is the impact of migration on aggregate measures of poverty?
(iv) What is the impact of remittances on aggregate measures of poverty?

The next section employs descriptive statistics to examine the relationship between migration and poverty on one hand, and migration and remittances on the other. The third section empirically examines the poverty impacts of migration, and of remittance receipts, both in the context of rural-urban linkages. The fourth section concludes the chapter.

8.2 Poverty, migration and remittances: some descriptive statistics

Before analysing – in the context of rural-urban linkages – the poverty effects of migration and remittances, it is useful to examine some relevant descriptive statistics. These statistics should provide some preliminary pointers to help augment the chapter's substantive analysis. Two sets of statistics are presented; the first relates to migration and poverty, and the second focuses on remittances and poverty. These figures are all based on data from the 1998/99 Ghana Living Standards Survey (GLSS). At this point it would be useful to make a few remarks about the poverty lines used in the analysis.

We use two poverty lines adopted from the Ghana poverty literature: an upper poverty line of 900,000 cedis and a lower (food) poverty line of 700,000 cedis (see GSS, 2000c; and Coulombe and McKay, 2003). Both lines are defined per adult equivalent per annum, and are in Accra January 1999 prices. The decision to adopt these poverty lines was influenced by a number of factors. These include the thoroughness of the methodology employed, coupled with the involvement of policymakers and researchers in discussions leading to the setting of the lines (see Coulombe and McKay, 2003). Moreover, these poverty lines are widely used in the Ghana poverty literature, and as a result their adoption would facilitate the comparison of our findings with those of other Ghana poverty studies.

As noted by Coulombe and McKay (2003), the adopted poverty lines were constructed with the cost-of-basic-needs (CBN) methodology, after having considered the food-energy-intake (FEI) approach. The upper poverty line may be regarded as the main poverty threshold, whilst the lower (food) poverty line separates persons who are extremely poor from those who are not that poor. In particular, for persons whose standard of living – as proxied by consumption expenditure – is less than the lower poverty line, their minimum calorie requirements cannot be satisfied even if their entire budget is allocated to food.

8.2.1 Migration and poverty

Table 69 shows the respective proportions of in-migrants and non-migrants that fall within some poverty groupings. These poverty groupings are "extremely poor", "poor, but not extremely poor", and "non-poor". Naturally, the "extremely poor" category consists of persons whose consumption welfare levels are less than the lower poverty line, whilst the second category captures those persons whose welfare levels lie in-between the lower and upper poverty lines. About a fifth of urban-to-rural in-migrants are extremely poor, whilst 13.6 percent are poor, but not in extreme poverty. A similar examination of urban non-migrants suggests the extent of poverty is much less amongst these. The sample proportion of urban non-migrants that are poor is 20.8 percent, with more than half of the poor being in extreme poverty (see Table 69).

Table 69: Distribution (%) of the poverty status of inter-sectoral in-migrants versus that of non-migrants; 1998/99

Poverty status	Urban-to-rural in-migrants	Urban non-migrants	Rural-to-urban in-migrants	Rural non-migrants
Extremely poor	19.65	12.45	15.69	36.54
Poor, but not extremely poor	13.56	8.38	5.54	15.81
Non-poor	66.79	79.17	78.77	47.65
Total	100.00	100.00	100.00	100.00

Source: Author's computation, using data from the 1998/99 Ghana Living Standards Survey.

Table 69 further shows that whereas 21.2 percent of rural-to-urban in-migrants are poor, more than a quarter of these poor individuals are extremely poor. For the sample of rural non-migrants, on the other hand, the poor constitutes 52.4 percent, with those in extreme poverty accounting for 36.5 percent of the sample. Examining the figures for all the four migrant-categories shown in Table 69, the category with the highest proportion (52.5 percent) of the poor is rural non-migrants. This category is followed by urban-to-rural in-migrants (33.2 percent), urban non-migrants (20.8 percent), and rural-to-urban in-migrants (21.2 percent), in that order.

8.2.2 Remittances and poverty

Table 70 shows the extent (proportion-wise) of poverty amongst four categories of households, namely, rural recipients of urban remittances, rural non-recipients of remittances, urban recipients of rural remittances, and urban non-recipients of remittances. Amongst rural recipients of urban remittances, 23.4 percent of households are extremely poor, whereas 13.8 percent are poor, but not extremely; the corresponding figures for rural non-recipients are 29.8 percent and 12.4 percent, respectively. Regarding urban recipients of rural remittances, the extent of poverty is lower; 18.6 percent of households are extremely poor, whilst the proportion of households that are poor, but not extremely, is 5.8 percent. Furthermore, urban non-recipients of remittances have the lowest extent of poverty, with the poor constituting 15.3 percent of households.

Table 70: Distribution (%) of the poverty status of inter-sectoral remittance recipients versus that of non-recipients; 1998/99

Poverty status	Urban-to-rural remittance recipients	Rural non-recipients	Rural-to-urban remittance recipients	Urban non-recipients
Extremely poor	23.37	29.75	18.60	8.97
Poor, but not extremely poor	13.78	12.35	5.81	6.31
Non-poor	62.86	57.91	75.58	84.71
Total	100.00	100.00	100.00	100.00

Source: Author's computation, using data from the 1998/99 Ghana Living Standards Survey.

Once again, within each category of households, the composition of poor households is dominated by those whose mean consumption expenditure is less than the lower (food) poverty line. Additionally, rural non-recipients have the highest extent of poverty, followed by rural recipients of urban remittances, urban recipients of rural remittances, and urban non-recipients, in that order. Whist the statistics in Table 70 are consistent with the influence of the rural-urban welfare gap, they are silent on the poverty impact of remittance receipts – an issue addressed in the next section.

8.3 Empirical analysis

The strategy employed in tackling the research questions is a "with and without" comparison of poverty transition profiles and FGT poverty indices, using counterfactual welfare scenarios. Since in the analyses carried out in the preceding two chapters, the counterfactual welfare levels were generated and the associated methodology was discussed, there is no need to repeat these here. It suffices to note that these counterfactual welfare levels are based on the application of a Heckman-type selectivity-adjusted method. All the analyses are based on the 1998/99 GLSS data.

8.3.1 Poverty transitions

The poverty impact of inter-sectoral migration (or of inter-sectoral remittances) can be observed by examining how the activity affects aggregate measures of poverty, such as the FGT poverty measures. However, in order to gain insight into the poverty impact of the activity on individual participants, it is useful to know how a participant's poverty status is affected by the activity (that is, migration or remittance receipt). In this latter case, it is convenient to summarise the poverty effects with a poverty transition matrix.

In this chapter therefore, poverty transition matrices are used to group individuals (or households) into four categories. For want of a better description, these categories are labelled "always poor", "escapes poverty", "falls into poverty", and "never poor". Owing to the fact that our analysis is not based on a *before-and-after* comparison, the labelling of the four categories can be misleading; it gives the impression that these poverty transition categories are describing comparisons of poverty statuses *before* and *after* the onset of the relevant phenomenon or activity. An explanation of the precise meaning of each of the poverty transition categories is therefore necessary.

In order to clarify the exact meanings of these poverty transition categories, their descriptions are summarised in Table 71. As shown in the Table, the transition categories describe comparisons between *two current poverty statuses*:

i) The poverty status in the presence of the phenomenon (that is, the current poverty status); and

ii) What the current poverty status would have been in the absence of the phenomenon (that is, the counterfactual current poverty status).

Table 71: Poverty transition categories

Current status in the absence of phenomenon (counterfactual scenario)	**Current status in the presence of phenomenon (actual scenario)**	
	Poor	***Not poor***
Poor	Always poor	Escapes poverty
Not poor	Falls into poverty	Never poor

The four poverty transition categories may be described as follows:

"Always poor"*: Poor individuals (or households) who would still have been poor if they had not undertaken the activity in question;*

"Escapes poverty"*: Non-poor individuals (or households) who would have been poor if they had not undertaken the activity in question;*

"Falls into poverty"*: Poor individuals (or households) who would have been non-poor if they had not participated in the activity in question;*

"Never poor"*: Non-poor individuals (or households) who would still have been non-poor in the absence of the activity.*

As an illustration, if the phenomenon of interest is rural-to-urban migration, then the "escapes poverty" category will comprise non-poor rural-to-urban in-migrants who would have been poor if they had not migrated. Similarly, for the case of urban-to-rural remittances, the "falls into poverty" category will consist of poor rural recipients of urban remittances who will have been non-poor if they had not received these remittances. In connection with this, it is worth noting here that it is feasible for a remittance recipient to "fall into poverty". This can occur, for instance, if the remittances are being received from a rural-to-urban in-migrant; in this case, the remittances constitute an inadequate substitute for the migrant's income contribution if he/she had remained in the rural area.

(a) Urban-to-rural migration

A poverty transition matrix for urban-to-rural in-migrants is shown in Table 72 below. On the basis of the upper poverty line (900,000 cedis), 75.4 percent of urban-to-rural in-migrants are in the "never poor" category (see third column of the Table). Thus, a sizable number of these migrants are not poor, and would not have been poor even if they had not migrated to the rural sector. About a tenth of urban-to-rural in-migrants are, however, in the "always poor" category; these poor migrants would still have been poor even if they had not migrated from the urban to the rural sector. 10.4 percent of the in-migrants are poor, but would have been non-poor if they had not migrated. On the other hand, 4.5 percent of the in-migrants "escaped poverty"; they are non-poor, but would have been poor if they had not migrated. On the whole, for about 85 percent of urban-to-rural in-migrants, there was no difference between their current poverty status and what their current poverty status would have been if they had not migrated.

In terms of the lower poverty line (700,000 cedis), the majority (88.7 percent) of urban-to-rural in-migrants are in the "never poor" category, whereas 5.0 percent are "always poor" (see sixth column of Table 72). Given the corresponding figures in the case of the upper poverty line, these statistics are not surprising; with a reduced poverty threshold, an increased number of these migrants are likely to be categorised as "never poor", whereas less are likely to be tagged "always poor". The proportion of urban-to-rural in-migrants that "escaped poverty" is 3.9 percent, whilst 2.4 percent are poor, but would have been non-poor if they had stayed in the urban sector. An observation similar to what was noted in the case of the upper poverty line is the large proportion (about 94 percent) of urban-to-rural in-migrants whose current poverty status is not different from what it would have been if they had not migrated. In other words, a large proportion of urban-to-rural in-migrants are in the "always poor" or "never poor" categories.

Table 72: Poverty transition statistics for urban-to-rural in-migrants

	Upper poverty line (900,000 cedis)			Lower poverty line (700,000 cedis)		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	33	9.79	68.75	17	5.04	56.67
Escapes poverty	15	4.45	31.25	13	3.86	43.33
Sub-Total (poor)	48		100.00	30		100.00
Falls into poverty	35	10.39	12.11	8	2.37	2.61
Never poor	254	75.37	87.89	299	88.72	97.39
Sub-Total (non-poor)	289		100.00	307		100.00
Total	337	100.00		337	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

Does the observation that a large majority of urban-to-rural in-migrants are in the "always poor" or "never poor" categories imply that urban-to-rural migration has little impact on the poverty status of the in-migrants? To address this question, it is worth noting a couple of points. Firstly, most urban-to-rural in-migrants would have been non-poor in the absence of migration[77]; 85.8 percent if the upper poverty line is used, and 91.1 percent in the case of the lower poverty line. Secondly, in assessing the extent to which migration affects the poverty status of in-migrants, it is more useful to split the assessment into two:

i) A comparison of the number of those who would have been poor in the absence of migration with the number of such migrants who are no longer poor;

ii) A comparison of the number of migrants who would have been non-poor (in the absence of migration) with the number of such migrants who are now poor.

[77] These are those in the "falls into poverty" and "never poor" categories.

Applying this modified approach yields the poverty transition statistics shown in the fourth and last columns of Table 72. These figures suggest that on the basis of the upper poverty line, 31.3 percent of those urban-to-rural in-migrants who would have been poor in the absence of migration were able to escape poverty by migrating. On the other hand, 12.1 percent of those who would have been non-poor in the absence of migration are currently poor. The corresponding figures in the case of the lower poverty line are 43.3 percent and 2.6 percent, respectively. To give an idea of the sensitivity of these statistics to model specification, they have been estimated for an alternative model[78], and these can be found in the Appendix to the chapter (see Table 82). It will be noticed that the two sets of poverty transition statistics are similar.

(b) Rural-to-urban migration

Poverty transition statistics corresponding to rural-to-urban migration are shown in Table 73. In terms of the upper poverty line, 9.8 percent of rural-to-urban in-migrants are "always poor", 26.8 percent "escaped poverty", and 4.3 percent are in the "falls into poverty" category (see column 3). The "never poor" category accounted for the highest proportion (59.2 percent) of rural-to-urban in-migrants. Using the lower poverty line, the observed pattern of statistics is generally similar to that found for the upper poverty line. The vast majority (76.8 percent) of rural-to-urban in-migrants are "never poor", whereas 3.7 percent are poor, but would have been non-poor if they had not migrated (see column 6 of Table 73). Furthermore, 14.0 percent of the in-migrants "escaped poverty", and 28.1 percent are in the "always poor" category.

[78] In this alternative model, the welfare regressions include regressors capturing the number of children and the number of elderly individuals in the household.

Table 73: Poverty transition statistics for rural-to-urban in-migrants

	Upper poverty line (900,000 cedis)			Lower poverty line (700,000 cedis)		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	16	9.76	26.67	9	5.49	28.13
Escapes poverty	44	26.83	73.33	23	14.02	71.88
Sub-Total (poor)	60		100.00	32		100.00
Falls into poverty	7	4.27	6.73	6	3.66	4.55
Never poor	97	59.15	93.27	126	76.83	95.45
Sub-Total (non-poor)	104		100.00	132		100.00
Total	164	100.00		164	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

As suggested earlier, more meaningful statistics are obtained if the percentages shown in the third and sixth columns of Table 73 are re-calculated as proportions, not of the total size of in-migrants, but rather the total size of relevant sub-groups of in-migrants. Using this modified version of poverty transition statistics, the incidence of "poverty escape" is 73.3 percent – using the upper poverty threshold – and 71.9 percent when the lower poverty line is employed (see the fourth and last columns of Table 73). Thus, our findings suggest that about 73 percent of poor rural-to-urban in-migrants were able to "escape poverty" by migrating; in other words, these in-migrants are non-poor, but they would have been poor if they had not migrated. For the poverty transition statistics corresponding to an alternative model, see Table 83 in the Appendix to this chapter. Again, the two sets of statistics are generally similar.

(c): Urban-to-rural remittance receipts

Poverty transition statistics for urban-to-rural remittance recipients have been provided in Table 74. Clearly, for both poverty lines, the category with the lowest proportion of recipients is "falls into poverty"; 0.4 percent and 0.2 percent for the upper and lower poverty lines, respectively. This result is not surprising; from our analysis of urban-to-rural remittances (chapter seven), 95.0 percent of recipients reaped welfare gains, with the mean proportionate welfare gain of all recipients being 60.6 percent. Thus, a very high proportion of rural recipients of urban remittances did not experience a welfare loss.

Table 74: Poverty transition statistics for rural recipients of urban remittances

	Upper poverty line (900,000 cedis)			**Lower poverty line (700,000 cedis)**		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	304	26.50	37.67	156	13.60	28.06
Escapes poverty	503	43.85	62.33	400	34.87	71.94
Sub-Total (poor)	807		100.00	556		100.00
Falls into poverty	4	0.35	1.18	2	0.17	0.34
Never poor	336	29.29	98.82	589	51.35	99.66
Sub-Total (non-poor)	340		100.00	591		100.00
Total	1,147	100.00		1,147	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

The modified poverty transition statistics are very informative (see the fourth and last columns of Table 74). On the basis of the upper poverty line, our findings show that amongst those urban-to-rural remittance recipients who would have been poor in the absence of remittances, 62.3 percent are non-poor owing to their receipt of remittances.

The lower poverty line yields a corresponding figure of 71.9 percent. These findings suggest that urban-to-rural remittances played a very important poverty-alleviation role in 1998/99. It is also worth mentioning that amongst those recipients who would have been non-poor in the absence of the remittances, 1.2 percent of the households are poor. The set of transition statistics for an alternative specification of the model are provided in the Appendix (see Table 84).

(d): Rural-to-urban remittance receipts

The poverty transition statistics for rural-to-urban remittance recipients are shown in Table 75. It is important to note that owing to the small size of our sample of rural-to-urban remittance recipients, conclusions arising from the examination of the calculated statistics are tentative. Using the upper poverty line, most (65.1 percent) of the remittance recipients are in the "never poor" category whilst the "escapes poverty" category had the smallest proportion (5.8 percent) of recipients (see the third column of Table 75). On the basis of the lower poverty line, 1.2 percent of rural-to-urban remittance recipients escaped poverty, whilst the "never poor" category accounted for 84.9 percent of the sample (see column 6 of Table 75).

The modified poverty transition statistics are shown in the fourth and last columns of Table 75. In terms of the upper poverty line, 33.3 percent of recipients who would have been poor without the remittances are non-poor. In other words, these urban households "escaped poverty" as a result of their receipt of rural remittances; on the basis of the lower poverty line, however, 20.0 percent of urban households "escaped poverty". It should be noted also that amongst households who would have been non-poor in the absence of remittance receipts, the proportions that "fell into poverty" are 21.1 percent (using the upper poverty line) and 9.9 percent (for the lower poverty line). These figures are higher than the corresponding figures for rural recipients of urban remittances: 1.2 percent and 0.3 percent, respectively (see fourth and last columns of Table 74). Using an alternative model specification, the poverty transition statistics for rural-to-urban remittance recipients are shown in Table 85.

Table 75: Poverty transition statistics for urban recipients of rural remittances

	Upper poverty line (900,000 cedis)			Lower poverty line (700,000 cedis)		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	10	11.63	66.67	4	4.65	80.00
Escapes poverty	5	5.81	33.33	1	1.16	20.00
Sub-Total (poor)	15		100.00	5		100.00
Falls into poverty	15	17.44	21.13	8	9.30	9.88
Never poor	56	65.12	78.87	73	84.88	90.12
Sub-Total (non-poor)	71		100.00	81		100.00
Total	86	100.00		86	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

8.3.2 Impact of inter-sectoral migration on aggregate poverty

In this sub-section, a number of aggregate poverty measures are used to assess the impact of migration (urban-to-rural and rural-to-urban) on Ghana's poverty in 1998/99. These measures include the FGT class of poverty indices and the mean poverty gap. As noted in chapter two, the FGT index yields indicators of poverty incidence, depth, or severity, depending on whether a non-negative parameter takes the value 0, 1, or 2, respectively (see Foster, Greer, and Thorbecke, 1984). The mean poverty gap, on the other hand, represents the average gap between the poverty line and a poor person's welfare; alternatively, the mean poverty gap can be interpreted as the gap between the poverty line and the mean welfare amongst the poor. In this chapter, the FGT measures reported are FGT (0) and FGT (1). Given the close link between poverty and inequality, measures for the Gini coefficient are also reported.

In order to assess the impact of migration on aggregate poverty and inequality, we first obtain estimates of the various poverty and inequality measures using data from the entire sample of households. We then re-estimate these measures for counterfactual scenarios utilising the results from the migration-welfare analysis carried out in chapter six. It is worth mentioning that in determining the "actual" poverty and inequality measures, predicted – instead of the actual – welfare values are employed for those observations whose counterfactual values are subsequently predicted. This ensures that the poverty impact evaluation is based on a comparison of predicted welfare values; a poverty impact evaluation that is based on a comparison of predicted and actual welfare might lead to a biased conclusion. On the basis of the upper poverty line, Table 76 and Table 77 summarise the findings for the impacts of urban-to-rural and rural-to-urban migration, respectively, with Table 78 showing that of inter-sectoral migration. Corresponding Tables for the lower poverty line are in the Appendix.

Table 76: Poverty and inequality impacts of urban-to-rural migration, using the upper poverty line; 1998/99

	Poverty/inequality statistic (Poverty line: 900,000 cedis)					
Migration scenario	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without urban-to-rural migration	0.385	0.137	1,416.4	580.2	319.8	0.383
With urban-to-rural migration	0.390	0.137	1,398.5	584.3	315.7	0.382

Table 77: Poverty and inequality impacts of rural-to-urban migration, using the upper poverty line; 1998/99

Migration scenario	Poverty/inequality statistic (Poverty line: 900,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without inter-sectoral migration	0.404	0.141	1,385.00	585.4	314.6	0.387
With inter-sectoral migration	0.393	0.139	1,409.3	582.8	317.2	0.386

Table 78: Poverty and inequality impacts of inter-sectoral migration, using the upper poverty line

Migration scenario	Poverty/inequality statistic (Poverty line: 900,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without inter-sectoral migration	0.395	0.139	1,388.9	582.5	317.5	0.382
With inter-sectoral migration	0.389	0.137	1,395.7	583.7	316.3	0.380

Using the upper poverty line, urban-to-rural migration led to a 0.5 percentage point increase in the incidence of poverty, whilst the lower poverty line yields a reduction of 0.3 percentage points. Rural-to-urban migration, on the other hand, resulted in a 1.1 percentage point reduction in poverty incidence in the case of the upper poverty line, with the adoption of the lower poverty line resulting in a fall of 0.5 percentage points.

As shown in Table 78 and Table 88, the overall impact of inter-sectoral migration on Ghana's poverty incidence was a fall of 0.6 percentage points, while the effect on extreme poverty was a reduction of 0.8 percentage points. An examination of the other reported poverty measures suggest that inter-sectoral migration did not have considerable impact on poverty. Similarly, the values of the Gini coefficient indicate that welfare inequality was hardly affected by inter-sectoral migration.

On the whole, the results suggest that although neither urban-to-rural nor rural-to-urban migration had a notable impact on poverty in Ghana, rural-to-urban migration was relatively more effective in reducing poverty. Indeed, in the case of urban-to-rural migration, it seemed to have led to a marginal increase in poverty incidence. While inter-sectoral migration may not have exerted much influence on poverty in Ghana during 1998/99, it is important to acknowledge that these findings relate to the direct impact of migration. Thus, inter-sectoral migration could still have an important indirect role in reducing Ghana's poverty. The subject of the next sub-section has particular relevance to this issue.

8.3.3 Impact of inter-sectoral remittances on aggregate poverty

In examining the impact of inter-sectoral remittances on aggregate poverty, we adopt the same approach used to assess the impact of inter-sectoral migration on aggregate poverty. Thus, the analysis utilises the results of the remittance-welfare analysis carried out in chapter seven. In terms of the upper poverty line, the impact – on aggregate poverty (and inequality) – of remittance inflows between rural and urban sectors has been summarised in the three Tables below; the findings for the combined impact of inter-sectoral remittance inflows are provided in Table 81, while the separate impacts of urban-to-rural and rural-to-urban remittance receipts are shown in Table 79 and

Table 80, respectively. The corresponding results for the case of the lower poverty line can be found in the Appendix. Urban-to-rural remittance receipts resulted in a 6.6 percentage point reduction in the incidence of poverty, whereas the incidence of extreme poverty decreased by 6.5 percentage points as a result (see Table 79 and Table 89). Furthermore, owing to urban-to-rural remittance inflows, the Gini coefficient registered a 2.1 percentage point decline, suggesting that Ghana's urban-to-rural remittance inflow had a notable favourable impact on welfare inequality.

An examination of Table 80 shows that the impacts of rural-to-urban remittances on poverty and inequality were marginal; each of the poverty and inequality measures virtually remained unchanged. These results suggest that the poverty and inequality impacts of urban-to-rural remittance receipts were much bigger than those of rural-to-urban remittance inflows. Additionally, these findings are consistent with the corresponding analysis of poverty transitions. It would be recalled that in our examination of poverty transitions, the "poverty escape" incidence associated with urban-to-rural remittance receipts was much larger than the corresponding figure for rural-to-urban remittances (see Table 74 and Table 75).

Table 79: Poverty and inequality impacts of urban-to-rural remittance receipts, using upper poverty line; 1998/99

Remittance scenario	**Poverty/inequality statistic (Poverty line: 900,000 cedis)**					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without receipts of urban-to-rural remittances	0.454	0.163	1,327.0	576.8	323.2	0.399
With receipts of urban-to-rural remittances	0.388	0.133	1,387.7	591.8	308.2	0.378

Table 80: Poverty and inequality impacts of rural-to-urban remittance receipts, using upper poverty line; 1998/99

Remittance scenario	Poverty/inequality statistic (Poverty line: 900,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare (‘000 cedis)	Mean welfare of the poor (‘000 cedis)	Mean poverty gap (‘000 cedis)	Gini coefficient
Without receipts of rural-to-urban remittances	0.394	0.138	1,412.0	584.2	315.8	0.387
With receipts of rural-to-urban remittances	0.395	0.139	1,411.5	584.1	315.9	0.388

Table 81: Poverty and inequality impacts of inter-sectoral remittance receipts, using the upper poverty line; 1998/99

Remittance scenario	Poverty/inequality statistic (Poverty line: 900,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare (‘000 cedis)	Mean welfare of the poor (‘000 cedis)	Mean poverty gap (‘000 cedis)	Gini coefficient
Without receipts of inter-sectoral remittances	0.453	0.162	1,326.9	577.5	322.5	0.398
With receipts of inter-sectoral remittances	0.389	0.133	1,387.1	592.5	307.5	0.378

Source: Author’s calculation, using data from the Ghana Living Standards Survey, 1998/99.

In view of the notable impact of urban-to-rural remittances on poverty and inequality, coupled with the negligible poverty and inequality impacts of rural-to-urban remittances, it is not surprising that Table 81 is almost identical to Table 79. In other words, the poverty and inequality impacts of inter-sectoral remittance receipts are almost entirely dominated by the impacts of urban-to-rural remittances. On the whole,

our results suggest that remittance flows have a larger impact on poverty and inequality, relative to the impact of migration. However, since there is often a strong link between migration and remittances, it is helpful to treat the relatively low poverty (and inequality) impact of migration in the context of the likelihood that whilst its direct impact may be small, its indirect effect may be substantial. In other words, the poverty impacts of inter-sectoral migration extend beyond the impacts on the migrants. To the extent that many of these migrants tend to send remittances to relatives, it is important to recognise the indirect poverty impacts of migration through remittances.

8.4 Conclusion

The main purpose of this chapter has been to extend – in the context of Ghana's rural-urban linkages – the analysis of the welfare impacts of migration and remittances to the specific subject of poverty. To this end, the following questions have been addressed:

(i) What is the impact of migration on the poverty status of in-migrants?

(ii) What is the impact of remittances on the poverty status of recipients?

(iii) What is the impact of migration on aggregate measures of poverty?

(iv) What is the impact of remittances on aggregate measures of poverty?

Throughout the analysis, relevant counterfactual measures of welfare (derived from the preceding two chapters) have been employed.

Our results indicate that migration (urban-to-rural and rural-to-urban) has often had an impact on the poverty status of individuals[79]. With both urban-to-rural and rural-to-urban migration, sizeable proportions of migrants who would have been poor in the absence of migration were able to "escape poverty" in the sense that they are currently non-poor. It should be noted though, that some poor migrants would have been non-poor if they had not migrated. Regarding the impact of migration on aggregate poverty (and inequality), the evidence suggests there is little direct impact, although a more significant indirect impact (especially through remittance flows) is likely. On the whole, these results regarding the impact of migration on poverty are consistent with the findings of Litchfield and Waddington (2003).

[79] That is, in the absence of migration, the individual's current poverty status would have been different from what it is now.

Inter-sectoral remittance flows also had impacts on the poverty status of recipients. Regarding rural recipients of urban remittances, 62.3 percent of households who would have been poor in the absence of the remittances were able to escape poverty; the corresponding statistic for urban recipients of rural remittances is 33.3 percent. Relative to inter-sectoral migration, inter-sectoral remittances (effectively, urban-to-rural) had a higher and more favourable impact on aggregate poverty (and inequality). Notably, our findings on the poverty impacts of inter-sectoral remittances are consistent with those of Adams' (2006) study on Ghana.

Although this chapter has addressed important issues relating to the poverty impacts of migration and remittances, further research into related issues would be useful. Related research themes with scope for fruitful research include the poverty impacts of other forms of internal migration and remittance flows, as well as the poverty dimensions of international migration and remittances. For example, it would be useful to know the poverty impacts of rural-to-rural and urban-to-urban migration. Similarly, knowledge about the poverty dimension of international remittances vis-à-vis any links to internal remittances would be very informative. The GLSS4 dataset should be adequate for at least a preliminary investigation of these issues.

Appendix to Chapter Eight

Table 82: Poverty transition statistics for urban-to-rural in-migrants using an alternative model specification[80]

	Upper poverty line (900,000 cedis)			**Lower poverty line (700,000 cedis)**		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	36	10.68	70.59	18	5.34	58.06
Escapes poverty	15	4.45	29.41	13	3.86	41.94
Sub-Total (poor)	51		100.00	31		100.00
Falls into poverty	29	8.61	10.14	7	2.08	2.29
Never poor	257	76.26	89.86	299	88.72	97.71
Sub-Total (non-poor)	286		100.00	306		100.00
Total	337	100.00		337	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

[80] In this alternative model, the welfare regressions include regressors for the number of children and the number of elderly individuals in the household.

Table 83: Poverty transition statistics for rural-to-urban in-migrants using the alternative model specification[81]

	Upper poverty line (900,000 cedis)			**Lower poverty line (700,000 cedis)**		
Poverty transition status	Freq.	Percentage (of total)	Percentage (of sub-total)	Freq.	Percentage (of total)	Percentage (of sub-total)
Always poor	18	10.98	29.51	10	6.10	38.46
Escapes poverty	43	26.22	70.49	16	9.76	61.54
Sub-Total (poor)	61		100.00	26		100.00
Falls into poverty	6	3.66	5.83	6	3.66	4.35
Never poor	97	59.15	94.17	132	80.49	95.65
Sub-Total (non-poor)	103		100.00	138		100.00
Total	164	100.00		164	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

[81] In this alternative model, the number children and the number of elder individuals in the household are included in the set of regressors for the welfare equations.

Table 84: Poverty transition statistics for urban-to-rural remittance recipients using an alternative model[82]

	Upper poverty line (900,000 cedis)			**Lower poverty line (700,000 cedis)**		
Poverty transition status	Freq.	Percent (of total)	Percent (of sub-total)	Freq.	Percent (of total)	Percent (of sub-total)
Always poor	306	26.68	48.80	153	13.34	45.40
Escapes poverty	321	27.99	51.20	184	16.04	54.60
Sub-Total (poor)	627		100.00	337		100.00
Falls into poverty	5	0.44	0.96	7	0.61	0.86
Never poor	515	44.90	99.04	803	70.01	99.14
Sub-Total (non-poor)	520		100.00	810		100.00
Total	1,147	100.00		1,147	100.00	

Source: Author's calculation, using data from the Ghana Living Standards Survey, 1998/99.

[82] In this model the regressors for the welfare equations do not include the number of children and the number of elderly persons.

Table 85: Poverty transition statistics for urban recipients of rural remittances, using an alternative model specification[83]

	Upper poverty line (900,000 cedis)			Lower poverty line (700,000 cedis)		
Poverty transition status	Frequency	Percentage (of total)	Percentage (of sub-total)	Frequency	Percentage (of total)	Percentage (of sub-total)
Always poor	9	10.47	81.82	3	3.49	80.00
Escapes poverty	2	2.33	18.18	1	1.16	20.00
Sub-Total (poor)	11		100.00	4		100.00
Falls into poverty	15	17.44	20.00	9	10.47	10.98
Never poor	60	69.77	80.00	73	84.88	89.02
Sub-Total (non-poor)	75		100.00	82		100.00
Total	86	100.00		86	100.00	

Table 86: Poverty and inequality impacts of urban-to-rural migration, using lower poverty line; 1998/99

	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
Migration scenario	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without urban-to-rural migration	0.267	0.083	1,416.4	483.3	216.7	0.383
With urban-to-rural migration	0.264	0.082	1,398.5	481.8	218.2	0.382

[83] In this model specification, the regressors for the welfare equation include the number of children and the number of elderly individuals in the household.

Table 87: Poverty and inequality impacts of rural-to-urban migration, using lower poverty line; 1998/99

Migration scenario	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare (‘000 cedis)	Mean welfare of the poor (‘000 cedis)	Mean poverty gap (‘000 cedis)	Gini coefficient
Without inter-sectoral migration	0.272	0.084	1,385.0	483.0	217.0	0.387
With inter-sectoral migration	0.267	0.083	1,409.3	482.0	218.0	0.386

Table 88: Poverty and inequality impacts of inter-sectoral migration, using lower poverty line; 1998/99

Migration scenario	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare (‘000 cedis)	Mean welfare of the poor (‘000 cedis)	Mean poverty gap (‘000 cedis)	Gini coefficient
Without inter-sectoral migration	0.271	0.084	1,388.9	483.6	216.4	0.382
With inter-sectoral migration	0.263	0.082	1,395.7	481.1	218.9	0.380

Table 89: Poverty and inequality impacts of urban-to-rural remittance receipts, using lower poverty line; 1998/99

Remittance scenario	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without receipts of urban-to-rural remittances	0.323	0.097	1,327.0	488.8	211.2	0.399
With receipts of urban-to-rural remittances	0.258	0.079	1,387.7	485.7	214.3	0.378

Table 90: Poverty and inequality impacts of rural-to-urban remittance receipts, using lower poverty line; 1998/99

Remittance scenario	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare ('000 cedis)	Mean welfare of the poor ('000 cedis)	Mean poverty gap ('000 cedis)	Gini coefficient
Without receipts of rural-to-urban remittances	0.267	0.083	1,412.0	482.8	217.2	0.387
With receipts of rural-to-urban remittances	0.268	0.083	1,411.5	482.7	217.3	0.388

Table 91: Poverty and inequality impacts of inter-sectoral remittance receipts, using lower poverty line; 1998/99

Remittance scenario	Poverty/inequality statistic (Poverty line: 700,000 cedis)					
	FGT (0): headcount ratio	FGT (1): average normalised poverty gap	Mean welfare (‘000 cedis)	Mean welfare of the poor (‘000 cedis)	Mean poverty gap (‘000 cedis)	Gini coefficient
Without receipts of inter-sectoral remittances	0.322	0.097	1,326.9	488.9	211.1	0.398
With receipts of inter-sectoral remittances	0.257	0.079	1,387.1	485.7	214.3	0.378

Chapter Nine:
Conclusion

9.1 Introduction

The present study has employed data from the 1998/99 Ghana Living Standards Survey to examine the welfare impacts of a couple of Ghana's rural-urban linkages: migration and remittance flows. In the process, the determinants of these linkages have also been explored. A key feature of the study's methodological approach has been the application of econometric techniques to construct counterfactual scenarios. Using this approach, we have adequately addressed – in the context of Ghana's rural-urban linkages – all the core research questions, namely:

i) What factors influence migration?

ii) What is the impact of migration on the welfare of in-migrants?

iii) What factors influence remittance flows?

iv) What is the impact of remittances on recipients' welfare?

v) What are the poverty impacts of migration and remittances?

Before highlighting the study's main findings, it is important to mention that the discussions in other (auxiliary) chapters – especially the first three chapters – have underscored the prevalence of disparities in Ghana's rural-urban welfare and livelihoods. These disparities provide insight into the context within which migration and remittance flows occur between rural and urban areas.

9.2 Main findings

The study's findings highlight the importance of anticipated welfare gains and personal attributes in migration decisions. There is also support for the positive selectivity of both urban-to-rural and rural-to-urban in-migrants; in-migrants gained more than their non-migrant colleagues would have gained if they had migrated. The estimates of migration gains show different mean welfare impacts on our two types of in-migrants. Although some urban-to-rural in-migrants derived welfare gains from migrating, urban-

to-rural migration generally had a negative impact on the welfare of in-migrants. In the case of rural-to-urban migration, a small percentage of in-migrants incurred welfare losses, but on the whole, migration enhanced considerably the welfare of in-migrants. Additionally, there is evidence to suggest that on the whole, rural non-migrants would have incurred a reduction in welfare if they had migrated to urban areas. Furthermore, by examining return migration, further insight has been shed on migration's welfare impact; all else being equal, the consumption welfare of *rural-to-urban-to-rural* migrants is generally higher than that of rural non-migrants.

With regard to the impact of remittances on recipients' welfare, there is evidence for a positive impact. Although rural-to-urban remittances had little welfare impact, rural recipients of urban remittances reaped sizeable proportionate welfare gains. Our results also show that factors influencing remittance flows include employment income, the presence of an in-migrant, kin-fostering, the relationship between remitters and recipients, and gender. Additionally, there is support for the presence of both altruism and self-interest in remittance decisions. On the whole, the prevalence and importance of remittance flows have been underscored.

This study's findings regarding the poverty impacts of migration and remittances are notable. Our results indicate that migration has often affected the poverty status of individuals. With regard to both urban-to-rural and rural-to-urban migration, sizeable proportions of in-migrants who would have been poor in the absence of migration were able to escape poverty. According to our estimates, however, some poor migrants would have been non-poor if they had not migrated. Our findings further suggest that although there is little direct impact of inter-sectoral migration on aggregate poverty, the indirect impact – through remittance flows – is important. Indeed, for many remittance recipients, inter-sectoral remittances had an impact on their poverty status. In the particular case of rural recipients of urban remittances, more than 60 percent of households who would have been poor in the absence of the remittances were able to escape poverty. Relative to inter-sectoral migration, inter-sectoral remittances had a more favourable direct impact on aggregate poverty. Whereas inter-sectoral migration resulted in a 0.6 percentage point reduction in poverty incidence, inter-sectoral remittances reduced the incidence of poverty by 6.4 percentage points.

It is important to note that notwithstanding the limitations of the data, they are very useful and adequate for tackling the study's research questions. Confidence in the credibility of the findings is further enhanced by the fact that most of the conclusions remained intact when alternative model specifications were employed. The study has also obtained findings consistent with other migration and/or remittance studies (see Nakosteen and Zimmer, 1980; Litchfield and Waddington, 2003; and Adams, 2006).

9.3 Recommendations for further research

On the basis of this study's findings, there are prospects for further research work. In particular, it would be worthwhile to extend the study's analysis to cover the *rural-to-rural*, *urban-to-urban*, and international dimensions, and to investigate whether there are any links between the internal and international components of migration and remittance flows. Notably, the 1998/99 GLSS dataset should be enough for at least some preliminary investigation of these issues.

Regarding the acquisition of further insight into factors influencing the gains from migration (or remittances), there is scope for exploring the application of decomposition analyses, such as the Blinder-Oaxaca decomposition (see Blinder, 1973; and Oaxaca, 1973)[84]. This is a potentially interesting area for future work. Additionally, alternative approaches to estimating the impact of remittances can be investigated in follow-up studies. Such alternative methods might include the use of remittance size as an endogenous regressor[85].

An extension of the present study's analysis – and that of potential follow-ups – to non-consumption welfare should also be illuminating. Additionally, it would be useful to know the impacts of the various forms of migration and remittances on Ghana's welfare distribution. Furthermore, consideration should be given to the carrying out of a specialised national survey on migration and remittances. Such a survey would facilitate a study of seasonal and temporary migration and their welfare impacts, and help fill a void in the Ghana welfare literature.

[84] I am thankful to my External Examiner (Simon Appleton) for this suggestion.
[85] I am again thankful to Simon Appleton for this proposal.

9.4 Conclusion

On the whole, this study has made a significant contribution to the literature on various topics: migration, remittances, rural-urban linkages, welfare, and Ghana. The focus on rural-urban linkages is particularly important for a couple of reasons. Firstly, there is a dearth of quantitative economic analyses of such linkages for Ghana. Secondly, since urban-to-rural migration is often not analysed, our analysis of urban-to-rural migration and the associated poverty and welfare impacts is very significant.

The application of counterfactual analyses and the adjustment for selectivity bias further represent valuable contributions to the Ghana empirical literature. Additionally, the estimation of not only the welfare impacts on participants (migrants or remittance recipients), but also the welfare impacts on non-participants (that is, if they had participated) is very insightful. It is also notable that fostering – especially kin-fostering – has received some attention in this study. In spite of the fact that livelihoods in Ghana are often characterised by fostering, discussions about this practice rarely feature in the Ghana economics literature. This study's recognition of the role of fostering in rural-urban linkages is therefore significant.

The findings of this thesis will hopefully enhance knowledge and understanding of migration and remittance flows between rural and urban sectors, and help formulate more effective rural and urban development policies in Ghana and other developing countries.

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